DVD Receiver

MX3900D/37 & MX3910D/17/78
MX3950D/37 & MX3960D/17

Service
Service
Service

Service Manual

MP3-CD PLAYBACK MP3 COMPACT disc DIGITAL AUDIO

DVD VIDEO COMPACT disc DIGITAL VIDEO

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CLASS 1
LASER PRODUCT

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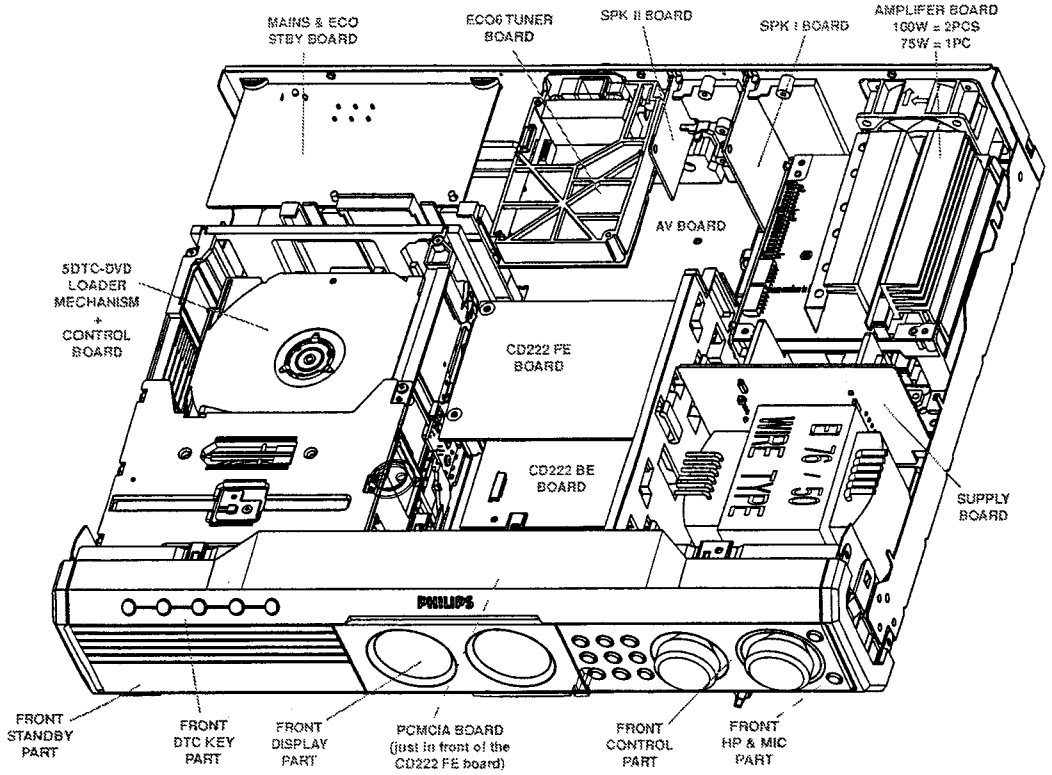
PHILIPS

.OCATION OF PC BOARDS



VERSION VARIATIONS:

Type /Versions: / Features & Board in used:	MX3900D /37		MX3910D /37	MX3910D /78	MX3950D /37		MX3960D /17	
Karaoke	-		-	-	-		-	
News	-		-	-	-		-	
RDS	-		-	-	-		-	
Pro-Scan	x		x	x	x		x	
PCMCIA	-		-	-	-		-	
Standby - Clock Display	x		x	x	x		x	
ECO Standby - No Display	x		x	x	x		x	
Voltage Selector	-		-	x	-		-	
Digital In / Out	x		x	x	x		x	
Aux Input	x		x	x	x		x	
TV Input	x		x	x	x		x	
Line Output	x		x	x	x		x	
SCART output	-		-	-	-		-	
Pr, Pb & Y Outputs	x		x	x	x		x	
CVBS Output	x		x	x	x		x	
S-Video Output	x		x	x	x		x	
Headphone Socket	x		x	x	x		x	
Tuner board - ECO6 System non-Cenelec	x		x	x	x		x	
Tuner board - ECO6 System Cenelec	-		-	-	-		-	
Amplifier board - 1pc (75W 6-Channel)	x		x	x	x		x	
Amplifier board - 1pc (75W 7-Channel)	-		-	-	-		-	
Amplifier board - 2pc (100W 6-Channel)	-		-	-	-		-	

SPECIFICATIONS

GENERAL:

Mains voltage : 120V for /17/37
110-127V/220-240V switchable for /78
Mains frequency : 50/60Hz
Power consumption : < 0,5W at ECO Standby
< 20W Standby (clock display)
Clock accuracy : < 4 seconds per day
Dimension centre unit : 435 x 100 x 360mm

TUNER:

FM

Tuning range : 87.5-108MHz
Grid : 50kHz
IF frequency : 10.7MHz ± 25kHz
Aerial input : 75Ω coaxial
Sensitivity at 26dB S/N : < 7µV
Selectivity at 600kHz bandwidth : > 25dB
Image rejection : > 25dB
Distortion at RF=1mV, dev. 75kHz : < 3%
-3dB Limiting point : < 8µV
Crosstalk at RF=1mV, dev. 40kHz : > 18dB

MW

Tuning range : 530-1700kHz
Grid : 10kHz
IF frequency : 450kHz ± 1kHz
Aerial input : Frame aerial
Sensitivity at 26dB S/N : < 4.0mV/M
Selectivity at 18kHz bandwidth : > 18dB
IF rejection : > 45dB
Image rejection : > 28dB
Distortion at RF=50mV, m=80% : < 5%

AMPLIFIER:

Output power [1] at 4Ω, 1 kHz, 10% THD
L/R : 2 x 75W RMS
2 x 60W FTC
Center : 72W
Surround L/R : 72W RMS/channel
Sub-woofer : 72W
Frequency response ±3dB : 20Hz-20kHz
Hum (minimum volume) : 200nW
Residue noise (min, volume) : 40nW
Digital Sound Control : Stereo, 3D Sound, Multi modes [2]
Bass & Treble : -3dB to +3dB
Input sensitivity
TV-in : 350mV ± 3dB
Aux-in : 880mV ± 2dB
Output sensitivity
Line out : 600mV ± 2dB at 47kΩ
Subwoofer out [3] : 1.85V ± 2dB at 47kΩ
Headphone (vol. max.) : 660mV ± 2dB at 32Ω
Center out (vol. max.) : 500mV ± 2dB at 47kΩ

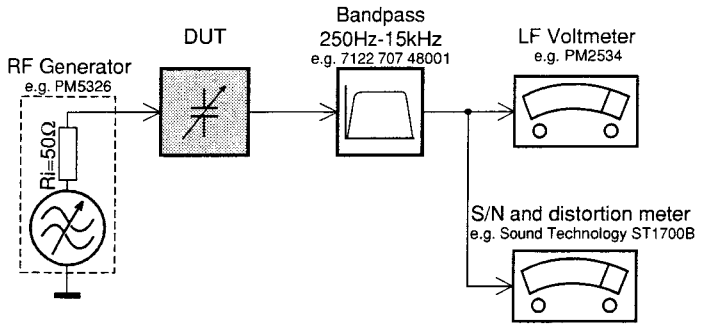
COMPACT DISC/VCD/DVD:

Video Decoding : MPEG-2
Video DAC : 10 Bits
Signal System : PAL / NTSC
Video Format : 4:3 / 16:9
MP3-CD bit rate [4] : 32-256 kbs,variable bitrates
MP3-CD sampling frequencies [4] : 32kHz, 44.1kHz, 48kHz
CBVS out [5]
CVBS level : 1.0 ± 0.1V_{p-p}
Luminance S/N ratio : > 45dB (unweighted)
YUV out [5]
Amplitude : 714mV ± 7mV
S/N ratio : > 50dB (unweighted)
S-Video out [5]
Y level : 1.0 ± 0.1V_{p-p}
Y S/N ratio : > 48dB (unweighted)
C level (burst) : 286mV_{p-p} +1/-4 dB
Digital Out : Coaxial acc IEC61937 / IEC60958
Digital In : Coaxial acc IEC60958

1) with only channel(s) under meausrement loaded, all other channels are unloaded.
2) Frequency response in each setting is software controlled.
3) measured with 55Hz at vol. maximum.
4) Recording format: ISO9660, UDF format is not supported.
5) Output terminals terminated with 75Ω

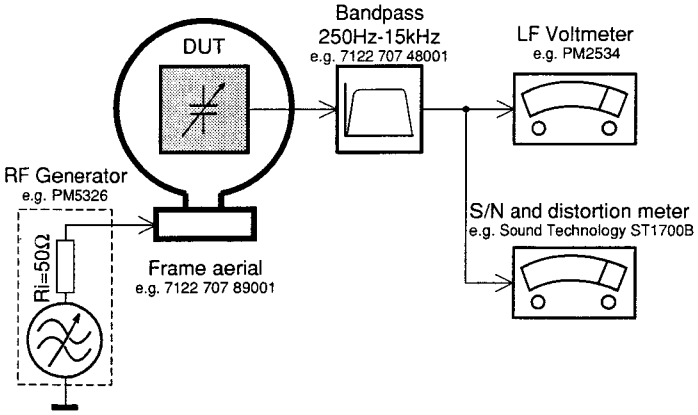
MEASUREMENT SETUP

Tuner FM



Use a bandpass filter to eliminate hum (50Hz, 100Hz) and disturbance from the pilottone (19kHz, 38kHz).

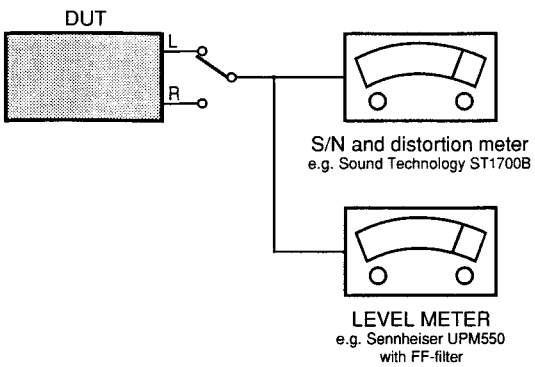
Tuner AM (MW,LW)



To avoid atmospheric interference all AM-measurements have to be carried out in a Faraday´s cage.
Use a bandpass filter (or at least a high pass filter with 250Hz) to eliminate hum (50Hz, 100Hz).

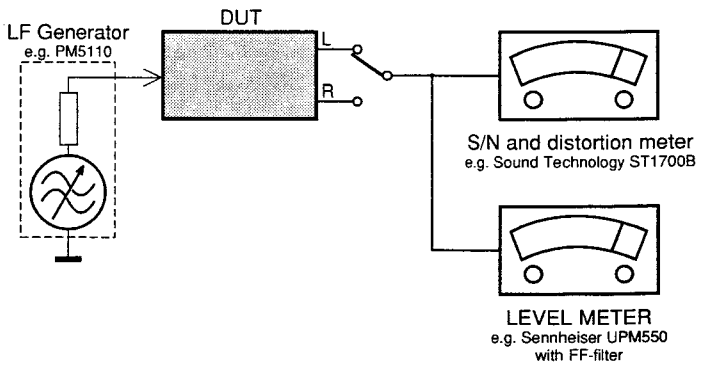
CD

Use Audio Signal Disc SBC429 4822 397 30184
(replaces test disc 3)



Recorder

Use Universal Test Cassette **CrO2** SBC419 4822 397 30069
or Universal Test Cassette **Fe** SBC420 4822 397 30071



SERVICE AIDS

Service Tools:

Universal Torx driver holder	4822 395 91019
Torx bit T10 150mm	4822 395 50456
Torx driver set T6 - T20	4822 395 50145
Torx driver T10 extended	4822 395 50423
Allen key set (1.5, 2, 2.5, 3, 4, 5, 6, 8mm)	5322 395 10754

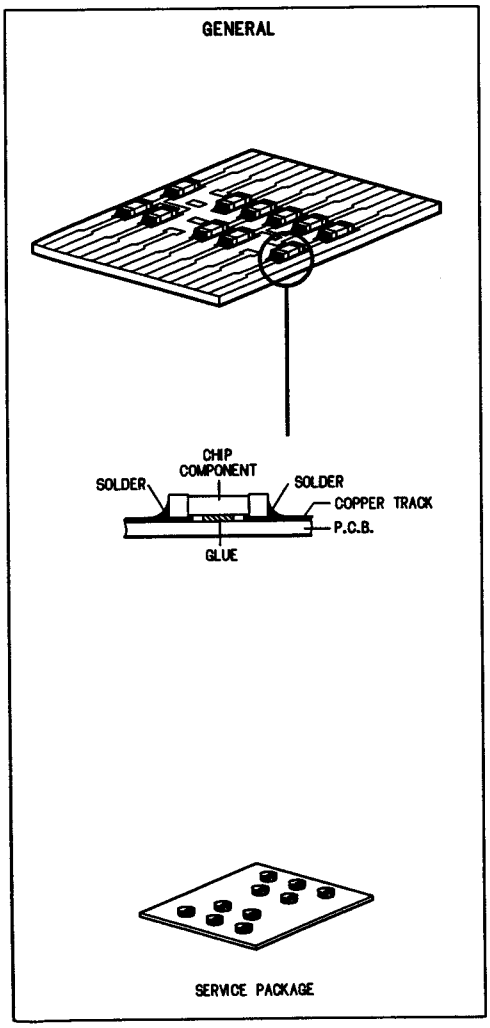
Compact Disc:

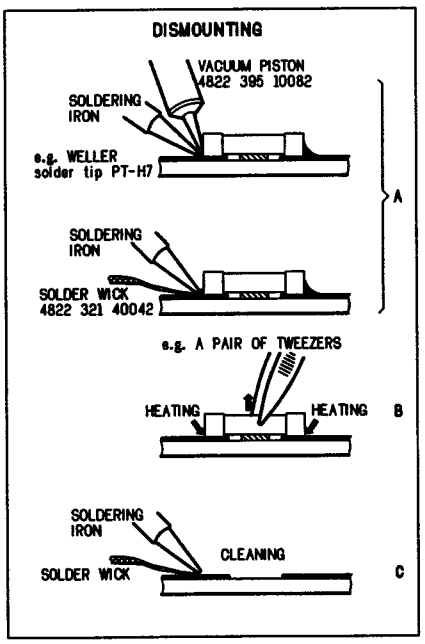
SBC426/426A Test disc 5 + 5A	4822 397 30096
SBC442 Audio Burn-in Test disc 1kHz	4822 397 30155
SBC429 Audio Signals disc	4822 397 30184
SBC444/444A	4822 397 30245
CD-RW Printed Audio Test Disc	7104 099 96611
Dolby Pro-logic Test Disc	4822 395 10216

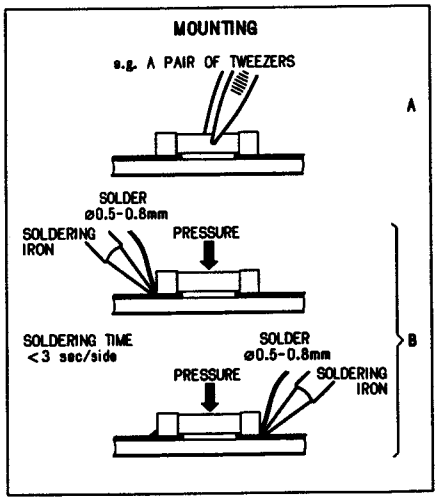
ESD Equipment:

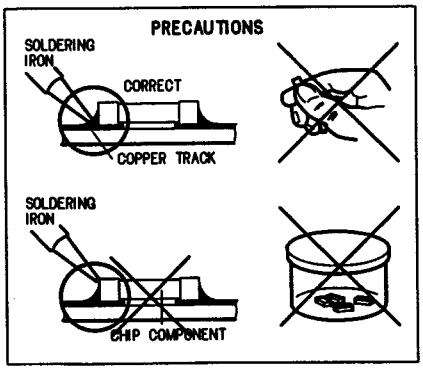
Anti-static table mat - large 1200x650x1.25mm	4822 466 10953
Anti-static table mat - small 600x650x1.25mm	4822 466 10958
Anti-static wristband	4822 395 10223
Connector box (1MΩ)	4822 320 11307
Extension cable (to connect wristband to conn. box)	4822 320 11305
Connecting cable (to connect table mat to conn. box)	4822 320 11306
Earth cable (to connect product to mat or box)	4822 320 11308
Complete kit ESD3 (combining all above products)	4822 320 10671
Wristband tester	4822 344 13999

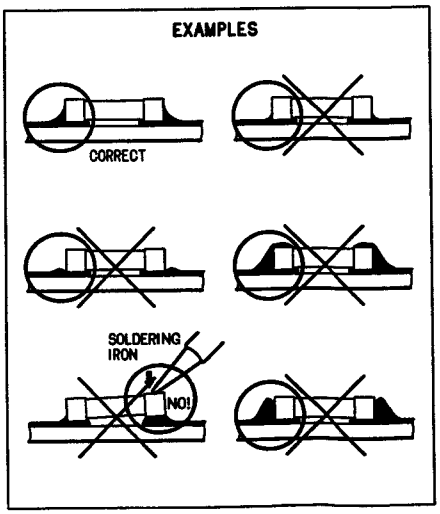
HANDLING CHIP COMPONENTS











ESD

(GB) WARNING

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically.
When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools also at this potential.

(NL) WAARSCHUWING

Alle IC's en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD).
Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen.
Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.
Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

(F) ATTENTION

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD).
Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation.
Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfiler le bracelet serti d'une résistance de sécurité.
Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

(D) WARNUNG

Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD).
Unsorgfältige Behandlung im Reparaturfall kan die Lebensdauer drastisch reduzieren.
Veranlassen Sie, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand verbunden sind mit dem gleichen Potential wie die Masse des Gerätes.
Bauteile und Hilfsmittel auch auf dieses gleiche Potential halten.

(I) AVVERTIMENTO

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).
La loro longevità potrebbe essere fortemente ridatta in caso di non osservazione della più grande cauzione alla loro manipolazione.
Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza.
Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

(GB)
Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified, be used.

(NL)
Veiligheidsbepalingen vereisen, dat het apparaat bij reparatie in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde, worden toegepast.

(F)
Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utiliséés les piéces de rechange identiques à celles spécifiées.

(D)
Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Original zustand des Geräts darf nicht verändert werden; für Reparaturen sind Original-Ersatzteile zu verwenden.

(I)
Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati i pezzi di ricambio identici a quelli specificati.

"After servicing and before returning set to customer perform a leakage current measurement test from all exposed metal parts to earth ground to assure no shock hazard exist. The leakage current must not exceed 0.5mA."

"Pour votre sécurité, ces documents doivent être utilisés par des spécialistes agréés, seuls habilités à réparer votre appareil en panne".

(GB) Warning !

Invisible laser radiation when open.
Avoid direct exposure to beam.

(S) Varning !

Osynlig laserstrålning när apparaten är öppnad och spärren är urkopplad. Betrakta ej strålen.

(SF) Varoitus !

Avatussa laitteessa ja suojalukituksen ohitettaessa olet alttiina näkymättömälle laserisäteilylle. Älä katso säteeseen!

(DK) Advarse !

Usynlig laserstråling ved åbning når sikkerhedsafbrydere er ude af funktion. Undgå udsaettelse for stråling.

DISMANTLING INSTRUCTIONS

Dismantling of the Front Panel assembly

1) Loosen the 9 screws to dismantle the Top Cover (pos 252)
   - 2 screws on each side
   - 5 screws on the Rear Panel (pos 251).

2) Loosen 5 screws A and 8 catches C1 to slide the Front Panel assembly (pos 101, 102, 103, etc) as per figure 1.

Note: To remove the Source / Volume control pc board (pos 1105B) 2 nuts hidden below the control knob assembly (pos 133, 134 and 135) must first be removed.

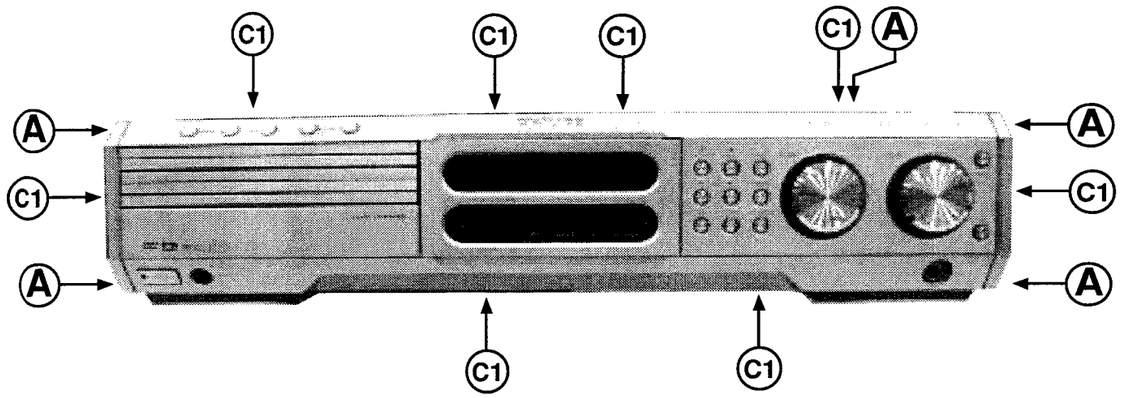


Figure 1

Hints for re-assembly of Top Cover

Due to appearance design the Top cover (pos 252) is sandwiched between the Front panel (pos 101) and the 2 side covers (pos 102 & 103), this make it necessary to remove the 2 side covers before re-assembly of Top cover.

1) To remove the side cover use a small screw driver with marking 16mm from the tip end.

2) Insert the screw driver into slot (as shown in figure 2) and push the tip outwards to release the side cover catch. The side cover can be pull outwards as soon as the top catch is released.

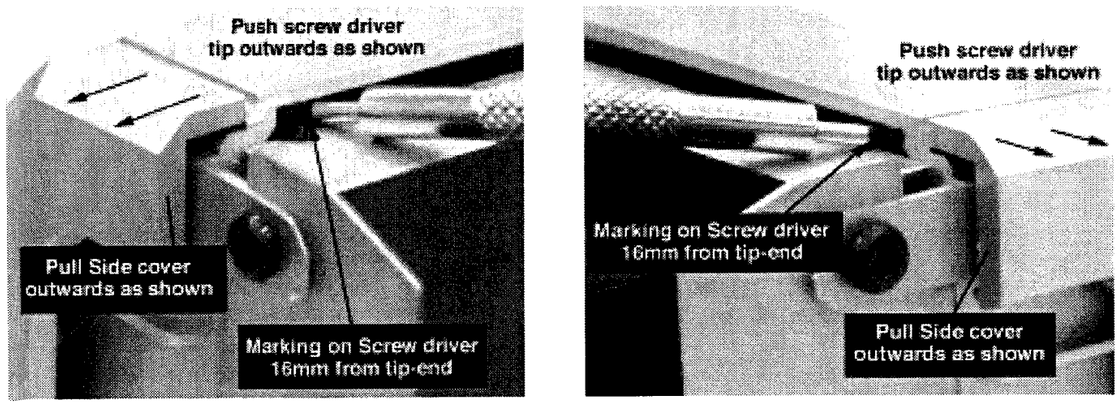

Push screw driver tip outwards as shown
Pull Side cover outwards as shown
Marking on Screw driver 16mm from tip-end
Push screw driver tip outwards as shown
Marking on Screw driver 16mm from tip-end
Pull Side cover outwards as shown

Figure 2

Dismantling the Tuner, Mains and AV boards

1) Loosen 3 screws D and 2 catches C2 on the Rear panel (pos 251) to remove the Tuner board assemby (pos 1101) as pe figure 3.

2) Loosen 1 screws E and 2 catches C3 to unslot the Mains board (pos 1102-A) out of the Rear panel as per figure 4.

3) Loosen bracket (pos 254) by turning a catch, sliding towards the outside and lifting it upwards as per figure 5.

4) Loosen 7 screws F and 2 C5 to separate Rear Plate assembly (pos 251 + 227) from the Bottom plate as per figure 3.

5) Uncatch C4 to remove the AV board (pos 1104) from the Bottom & Rear Plate assembly (pos 251 + 227) as per figure 5.

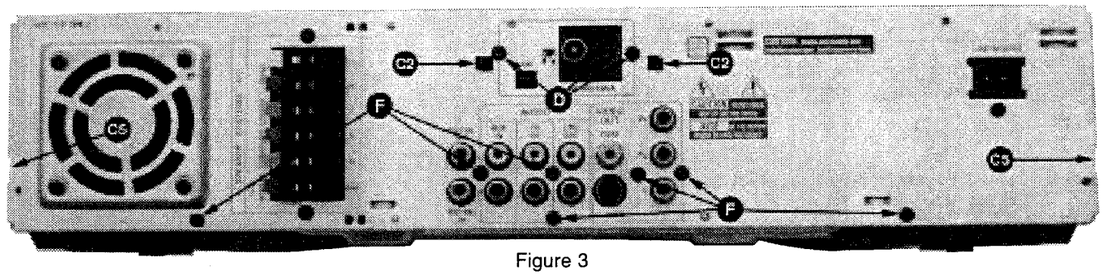


Figure 3

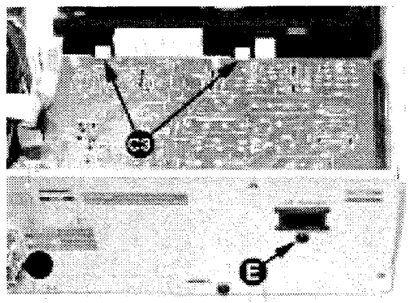


Figure 4

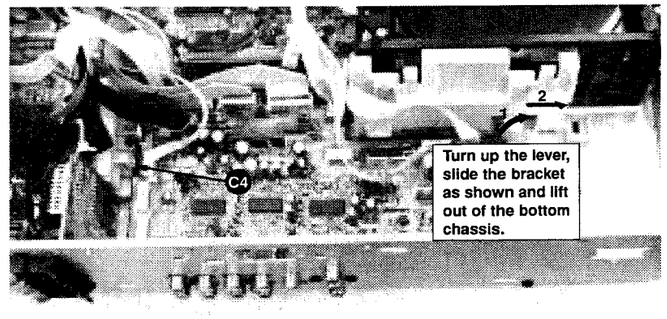


Figure 5

Dismantling the 5DTC Module

1) Loosen 1 screws E and 2 catches C3 to remove the Mains board as per figure 4.

2) Loosen bracket (pos 254) by turning a catch, sliding towards the outside and lifting it upwards as per figure 5.

3) Loosen 3 screws G, lift up the 5DTC Module's (pos 1103-A) rear and pull the module out towards the rear as per figure 6.

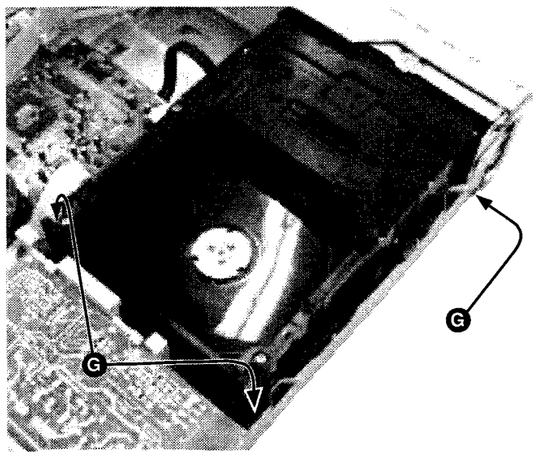


Figure 6

ismantling the Mono FE and BE boards

) Loosen 2 screws and 2 catches to remove the Mono BE board (pos 1103-B).

) Loosen 2 screws and 2 catches to remove the Mono FE board (pos 1103-C).

ismantling the Supply & Power Amplifier boards

) Loosen 2 screws B mounting the Supply board's (pos 1102-B) heatsink to the Bottom Plate (pos 227) as per figure 7.

Note: During re-assembly care must be taken to ensure the Mains Transformer wires to the Supply board is routed properly below the board.

) Loosen 4 screws C to dismantle the Power Amplifier board (pos 1102-D) from the Bottom Plate as per figure 7.

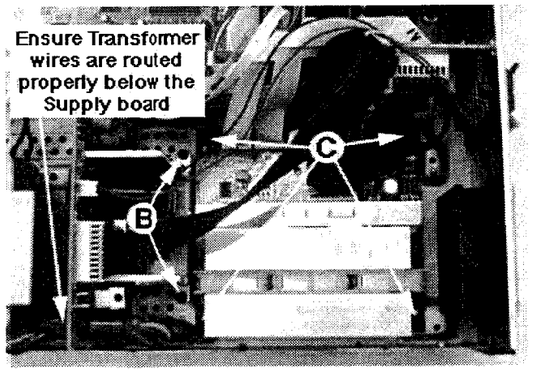
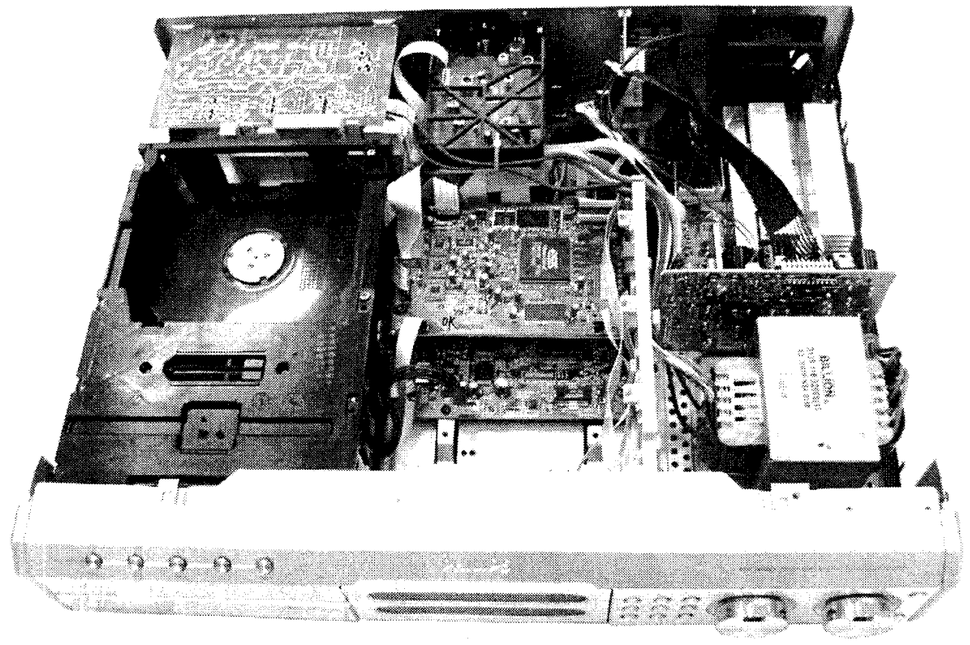


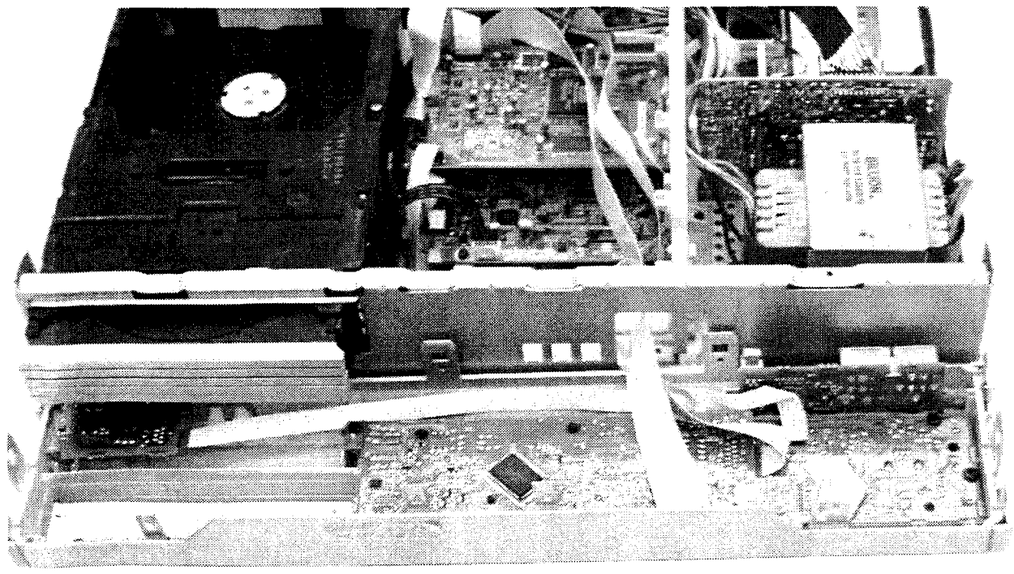
Figure 7

Service positions

Service position A (Top cover removed)

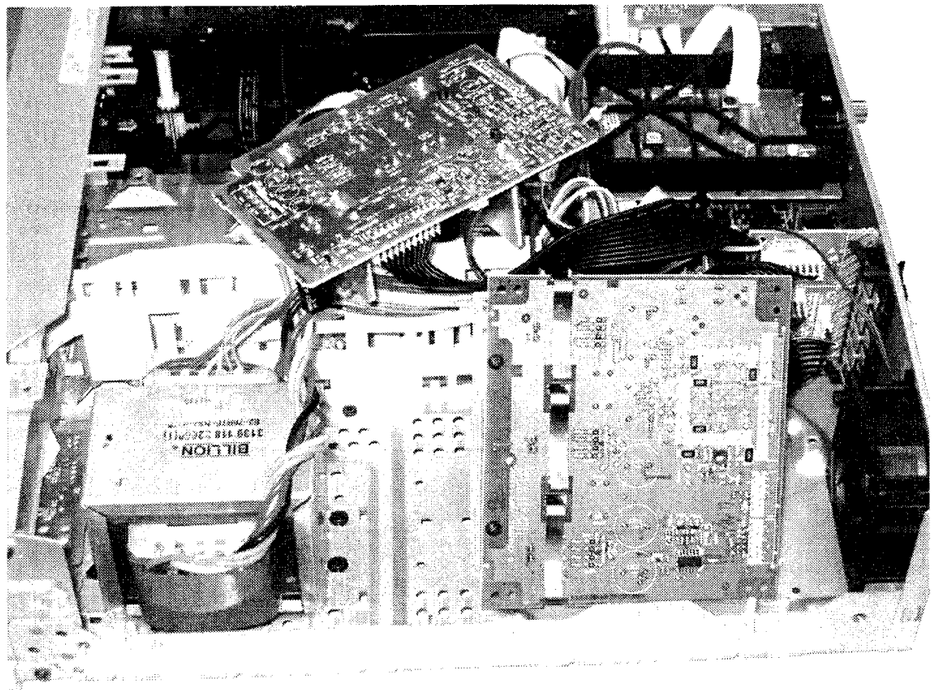


Service position B (Front Panel loosen)



Service positions

Service position C (Supply and Amplifier boards loosen)



Caution:

1) In some of the service positions the Mains supply is exposed, therefore service technicians have to exercise care to prevent electric shock.

2) The copper pattern on the Mains board should be covered with non-conductive insulation during fault-finding on other parts of the set.

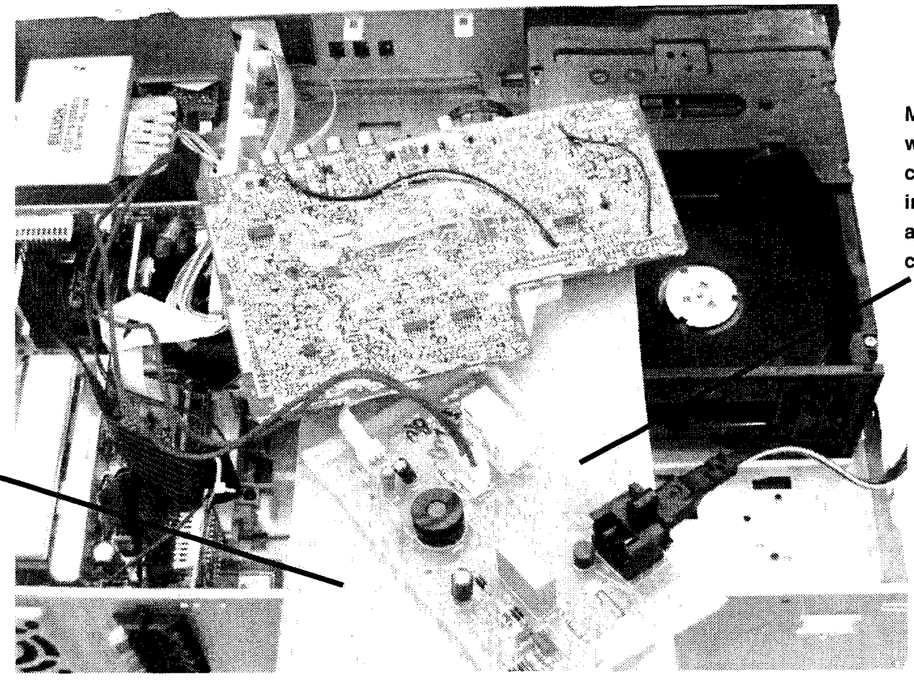
3) Insulation sheet (eg. thick paper or cardboard) should be use during fault-finding to prevent short-circuiting of copper patterns to metallic surroundings.

Note:

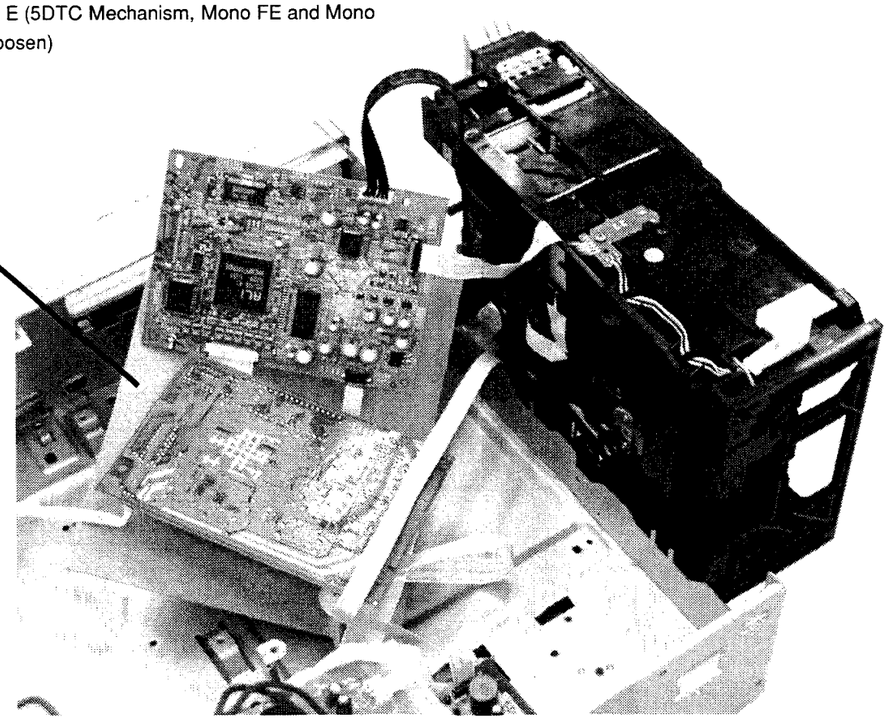
The ground connection between AV board stoko pin 1100 and Amplifier board stoko pin 1320 must be connect ed during Service pos C and D in order to have sound output at the Loudspeakers.

2-3

Service position D (Mains & AV boards loosen)

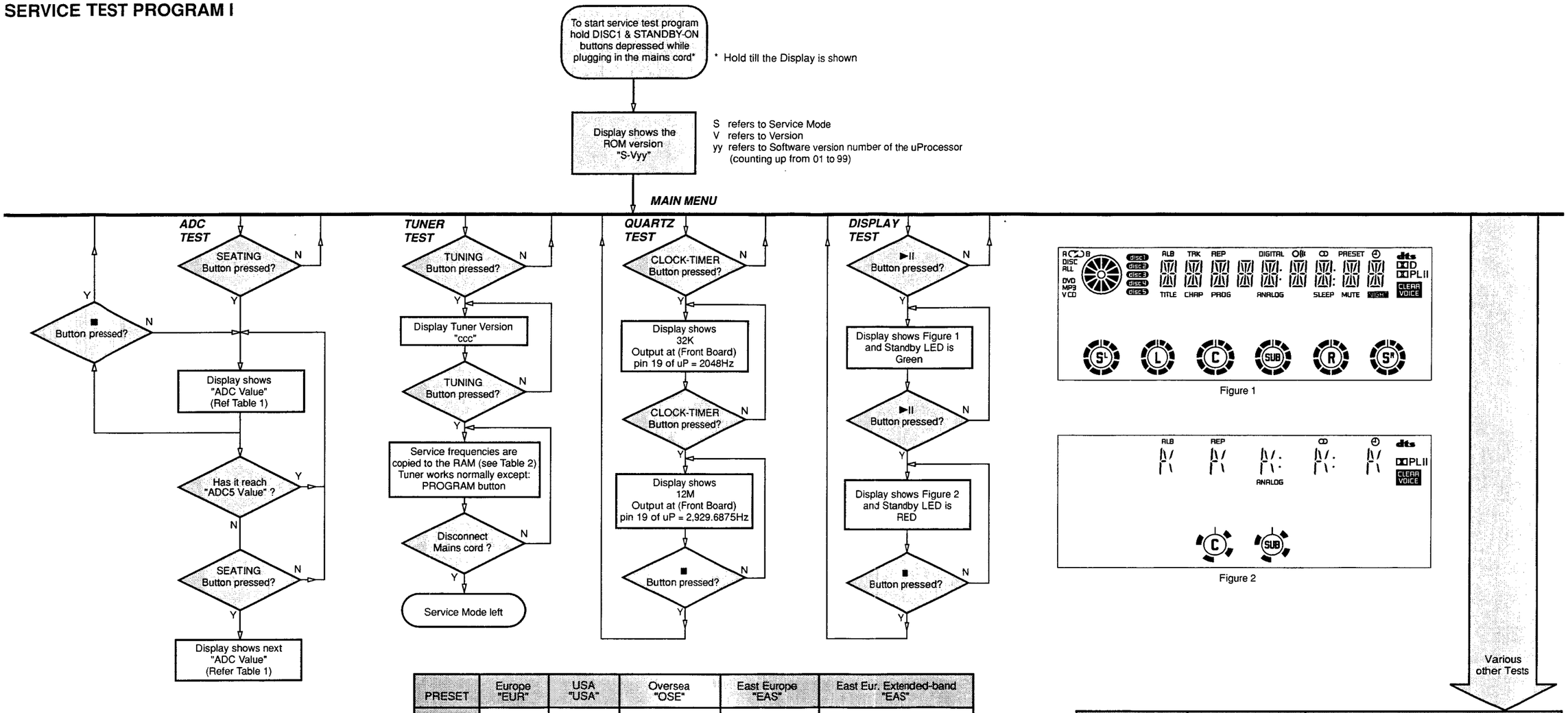


Service position E (5DTC Mechanism, Mono FE and Mono BE boards loosen)



3-1

SERVICE TEST PROGRAM I


To start service test program hold DISC1 & STANDBY-ON buttons depressed while plugging in the mains cord*
* Hold till the Display is shown
Display shows the ROM version "S-Vyy"
S refers to Service Mode
V refers to Version
yy refers to Software version number of the uProcessor (counting up from 01 to 99)
MAIN MENU
ADC TEST
SEATING Button pressed?
■ Button pressed?
Display shows "ADC Value" (Ref Table 1)
Has it reach "ADC5 Value" ?
SEATING Button pressed?
Display shows next "ADC Value" (Refer Table 1)
TUNER TEST
TUNING Button pressed?
Display Tuner Version "ccc"
TUNING Button pressed?
Service frequencies are copied to the RAM (see Table 2) Tuner works normally except: PROGRAM button
Disconnect Mains cord ?
Service Mode left
QUARTZ TEST
CLOCK-TIMER Button pressed?
Display shows 32K Output at (Front Board) pin 19 of uP = 2048Hz
CLOCK-TIMER Button pressed?
Display shows 12M Output at (Front Board) pin 19 of uP = 2,929.6875Hz
■ Button pressed?
DISPLAY TEST
►II Button pressed?
Display shows Figure 1 and Standby LED is Green
►II Button pressed?
Display shows Figure 2 and Standby LED is RED
■ Button pressed?
Various other Tests

Name	Input line to uProcessor IC	Remarks
ADC1	Key0	Return the value assign for each key button.
ADC2	Key1	Return the value assign for each key button.
ADC3	VU_IN	Varies according to the signal dc level
ADC4	MUX_DET	The set temperature is measured via this NTC line, if lower than 69 the set goes into Standby.
ADC5	Options	Return the value assign for the different possible options

Table 1

Note:
ADC Test is used for checking the ADC inputs to the microprocessor. The display shows an ADC value between 0 and 255 for an input signal between 0 and 5V.

PRESET	Europe "EUR"	USA "USA"	Oversea "OSE"	East Europe "EAS"	East Eur. Extended-band "EAS"
1	87.5MHz	87.5MHz	87.5MHz	87.5MHz	65.81MHz
2	108MHz	108MHz	108MHz	108MHz	108MHz
3	531kHz	530kHz	530/531kHz*	531kHz	74MHz
4	1602kHz	1700kHz	1700/1602kHz*	1602kHz	87.5MHz
5	558kHz	560kHz	560/558kHz*	558kHz	531kHz
6	1494kHz	1500kHz	1500/1494kHz*	1494kHz	1602kHz
7	87.5MHz	98MHz	98/87.5MHz*	87.5MHz	558kHz
8	87.5MHz	87.5MHz	87.5MHz	87.5MHz	1494kHz
9	87.5MHz	87.5MHz	87.5MHz	87.5MHz	98MHz
10	87.5MHz	87.5MHz	87.5MHz	87.5MHz	70.01MHz
11	98MHz	87.5MHz	87.5/98MHz*	98MHz	65.81MHz

Table 2

Note: * Depending on the selected grid frequency (9 or 10kHz).
By holding the "DISC5" and "STANDBY-ON" buttons depressed while switching on the Mains supply, one of the undermentioned features will be activated:
- the tuning grid frequency is toggled between 9kHz and 10kHz for the Oversea (/21) version.

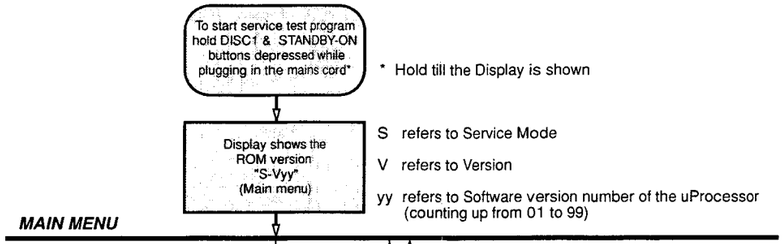
Figure 1

Figure 2

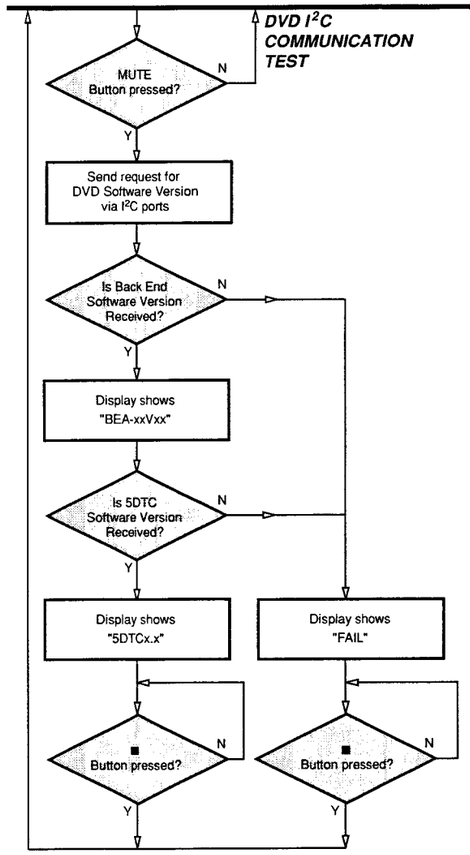
TEST	Activated with	ACTION
EEPROM TEST	►►I ■ to Exit	Some test patterns will be sent to the EEPROM. "PASS" is displayed if the uProcessor read back the test patterns correctly, otherwise "FAIL" will be displayed.
EEPROM FORMAT TEST	I◄◄	Load default data. Display shows "NEW" for 1 second. ***Caution!*** ***All presets from the customer will be lost!!***
AUTO STANDBY TOGGLE	SUBW + (Remote Control)	Pressing this button will toggle between the status "AUTO STANDBY ON" and "AUTO STANDBY OFF". The status will scroll once across the Display.
ROTARY ENCODER TEST	SOURCE / VOLUME Knob	Display shows value for 2 seconds. Values increases or decreases in steps of 1 until 0 (Min.) or 40 (Max.) is reached.
LEAVE SERVICE TEST PROGRAM	Disconnect mains cord	

3-2

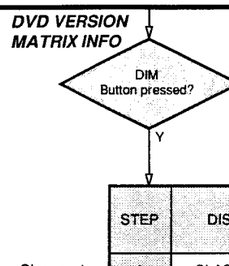
SERVICE TEST PROGRAM II


To start service test program hold DISC1 & STANDBY-ON buttons depressed while plugging in the mains cord*
* Hold till the Display is shown
Display shows the ROM version "S-Vyy" (Main menu)
S refers to Service Mode
V refers to Version
yy refers to Software version number of the uProcessor (counting up from 01 to 99)
MAIN MENU
DVD SERVICE TEST
DISC Button pressed?
N
Y
Display shows "DVD SVC"

Note:
1. Remote Control must be in DVD source before start of any DVD Service Test.
2. All buttons on this "DVD SVC" test refers to the buttons on the Remote control.
3. Awaits for the mechanism to initialized before performing DVD test.



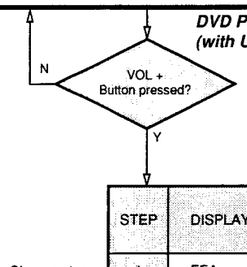
DVD I²C Communication Test is used to test the I²C communication port between the DVD module and the microprocessor of the set.



Choose step by pressing ◄◄ ►►

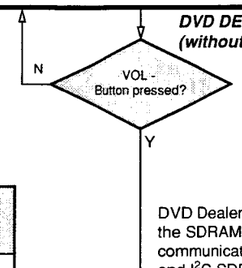
STEP	DISPLAY	REMARKS
1	SLASH '###'	Slash version number
2	REGION '#'	Region code setting (Number 1 - 6)
3	KARAOKE or NON KARA	Karaoke feature
4	V/O SCART or V/O PrPbY	Video Output setting
5	TV - NTSC or TV - PAL or TV - AUTO	TV system setting
		Press ■ to exit

DVD Version Matrix Info is used to read the version matrix information that are stored/defined in the DVD module software.



Choose step by pressing ◄◄ ►►

STEP	DISPLAY	ACTION
1	FEA-zzzz	Returns the Front End Ali Servo Processor software version.
2	TRAY	Tray 1 can be open or close with the ►II and PROGRAM buttons repectively. Insert a CD onto Tray 1 and close before proceding to next test.
3	SLEDGE	Sledge can be move in and out with the ►II and PROGRAM buttons respectively.
4	MOTOR	Dismotor is turn on and off by pressing ►II and PROGRAM buttons repectively.
5	FOC-RDL FOC FAIL RDL FAIL	DVD Module does a Focus test follow by Radial test if focus is successful. Is displayed when the focus test fail. Is displayed when the radial test fail.
6	GROOVES	In this test the laser spot can jumps to another position. Press ►II to jump to the next postion & PROGRAM to jump to the previous postion.
		Disconnect mains cord to exit the Service Test Program.



DVD Dealer Test is used to check the flash RAM, the SDRAM CLOCK, the NVRAM and the I²C communication (I²C NVRAM I²C DAC, I²C 5DTC and I²C SDPIF IC)

STEP	DISPLAY	ACTION
1	CHECKSUM	Check the correctness of the checksum in the flash. Display will show "PASS" or "FAIL" accordingly.
2	SDRAM CLK	Test the SDRAM clock output. Display "PASS" or "FAIL" accordingly. Pro-Scan: 114MHz +/- 25ppm Non Pro-Scan: 108MHz +/- 25ppm
3	NVRAM	Makes a write followed by a read test to the NVRAM. Display will show "PASS" or "FAIL" accordingly.
4	I²C COMM	Checks I²C bus to NVRAM, DAC, 5DTC and SDPIF IC. Display will show "PASS" or "FAIL" accordingly.
		Disconnect mains cord to exit the Service Test Program.

Reprogramming of DVD version matrix

Caution:
This information is confidential and may not be distributed. Only a qualified service person should reprogram the mono BE board.

After replacement/repair of the Mono BE board, the customer settings and also the region code may be lost. Reprogramming will put the set back in the state in which it has left the factory, i.e. with the default settings and the allowed region code.

Reprogramming will be done by way of the Remote Control.
Put the player in stop mode, Disc 1 with no disc loaded.

Do the following steps with the Remote Control:

1) Press ***<DISC MENU>*** followed by numerical keys ***<1> <5> <9>***
   The set display shows: ***- 0 - 0 - 0 - 0 -***

2) Press now successively the following numerical keys :
   for MX3900D/37 : ***<1><1><4> <0><1><0> <0><0>*** ***US***

   for MX3910D/17 : ***<1><1><4> <0><1><0> <0><0>*** ***US***
   for MX3910D/78 : ***<4><1><4> <0><1><0> <0><0>*** ***LATAM***

   for MX3950D/37 : ***<1><1><4> <0><1><0> <0><0>*** ***US***

   for MX3960D/17 : ***<1><1><4> <0><1><0> <0><0>*** ***US***

3) Press ***<DISC MENU>*** again. The set display will show: ***DONE***.
   Caution: The set needs about 3 seconds to reset to required setting.

4) Disconnect mains to ensure proper reset.

Procedure for check Software version

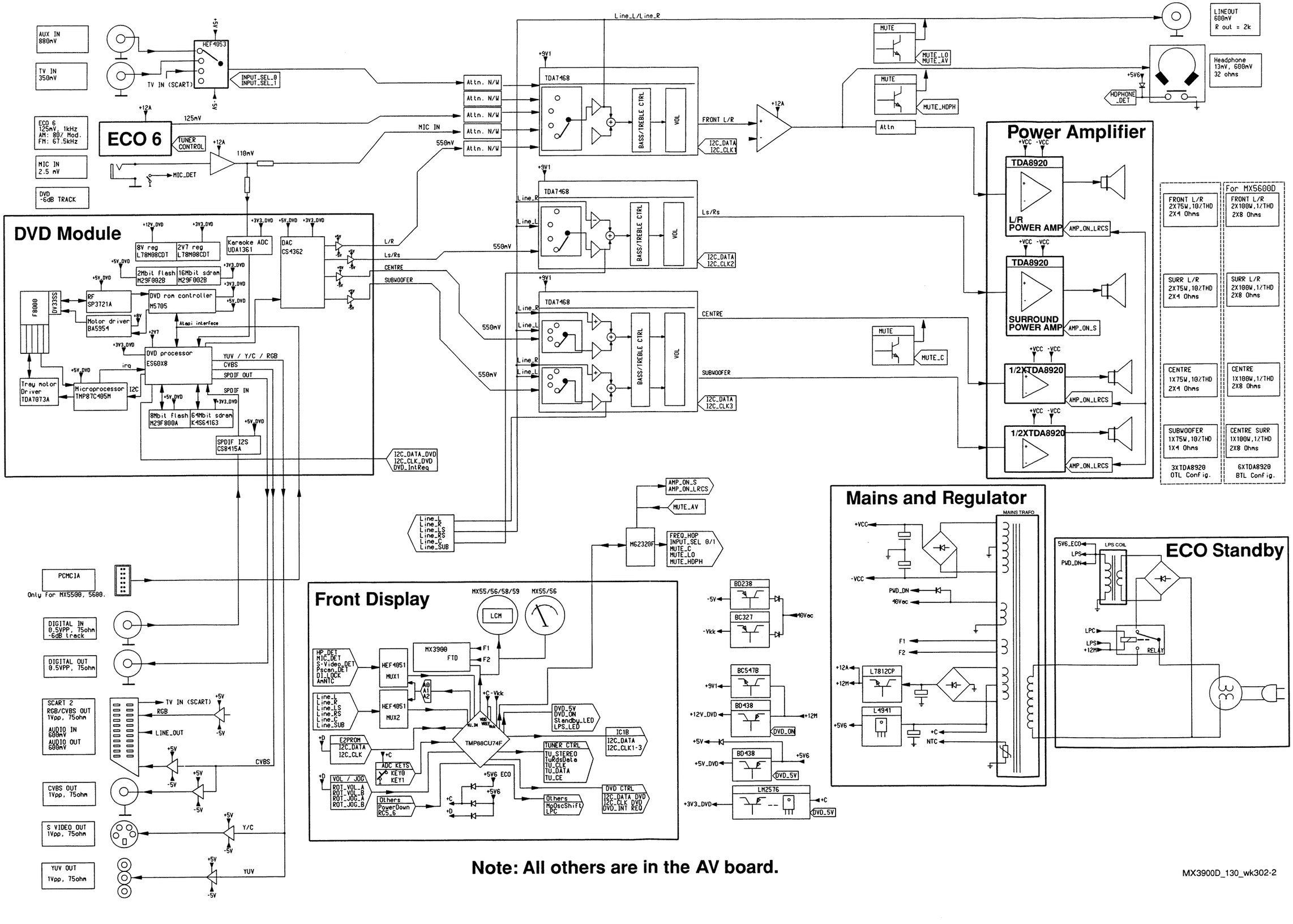
1) Select Disc with the Remote Control
2) Press <SYSTEM MENU>
3) Use the down key move all the way down (4x) to bottom of "Setup Menu".
4) Use the right key move to the sub-menu.
5) Use the down key move down (3x) to "Default" and down one more time to see the software version.
6) The TV screen will shows:
   R1000 BEA3131PV08 R2812 V72
   where 1000 = DVD version matrix (Region, Karaoke Yes/No, Default Video O/P, Default TV system)
   31V08 = BE software version
   2812 = FE software version
   72 = 5DTC servo version
7) Press <OK> three times to exit.

Procedure to upgrade software

1) Power up the set and open tray Disc 1.
2) Place upgrade CD-ROM onto tray and close.
3) The set will display "DOWNLOAD" while the TV screen will shows:
   Reading --> Update BEA --> Writing --> Done --> Update FEA --> FEA Finish --> Unload Disc 1
4) Tray Disc 1 should then open.
5) The whole process should last for less than 2 minutes. Remove the upgrade CD-ROM and unplug the Mains supply.

4-1

SET BLOCK DIAGRAM



Note: All others are in the AV board.

MX3900D_130_wk302-2

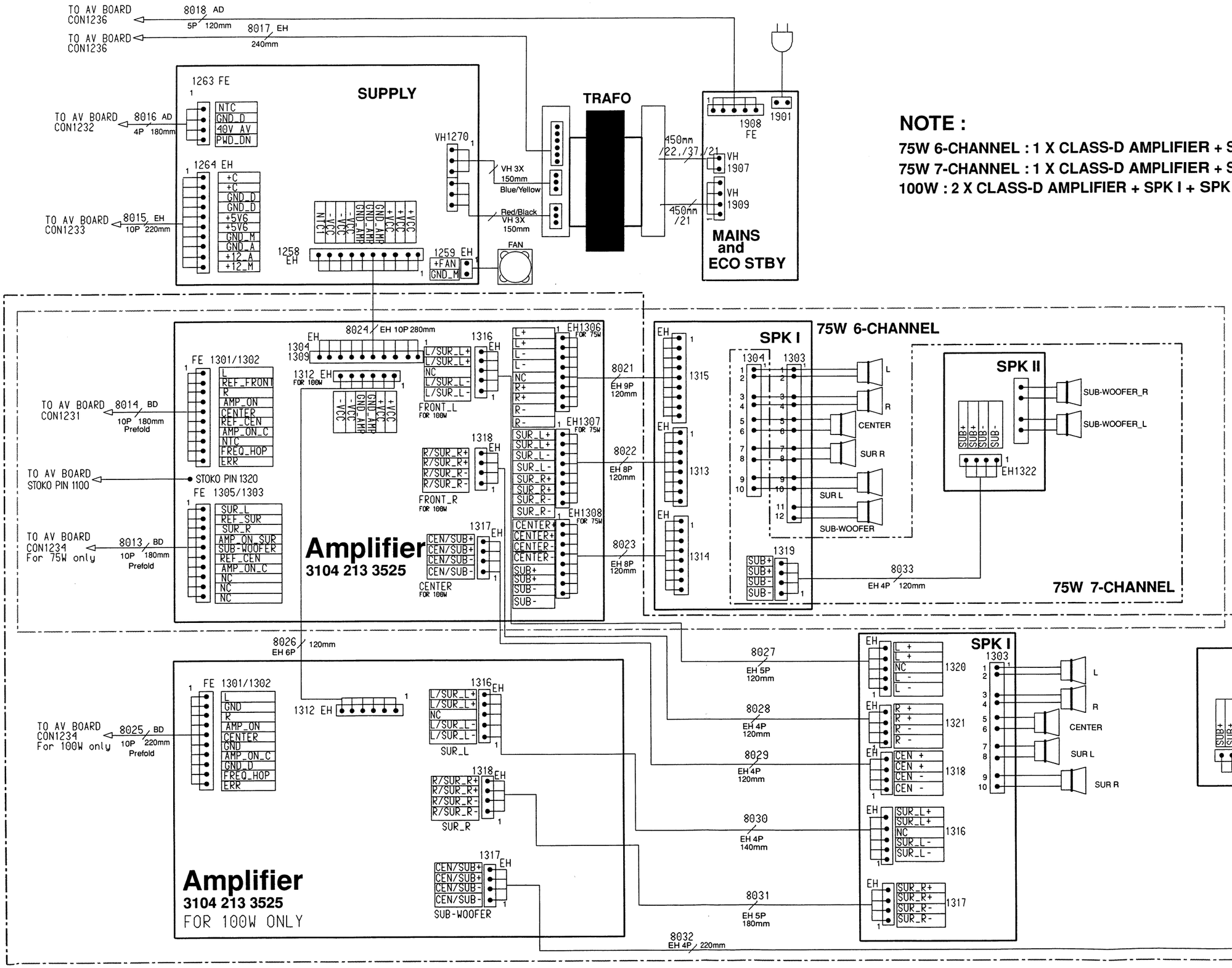
5-1

MAIN WIRING DIAGRAM

TUNER
1120 FE
8000 AD 8P 140mm
1 1237 FE
For i6000
TU_L GND_A TU_R +12_A TU_EN TU_DATA TU_CLK TU_ST
GND_A SD +9V_A FM_DET TU_R TU_EN TU_L DI DO/ST TU_CLK
1236 FE
LPC GND +5V6_ECO +12_M PW_DN
for ECO SET ONLY
1235 EH
40VAC GND_D ✓F1 ✓F2 GND_D NTC
8018 AD 5P 120mm
8017 EH 240mm
1232 FE
8016 AD 4P 180mm
1263 FE
NTC GND_D 40V_AV PWD_DN
1320 STOKO PIN
1908 FE
LPC GND +5V6_ECO +12_M PW_DN
for ECO SET ONLY
1100 STOKO PIN
1233 EH
8015 EH 10P 180mm
1264 EH
+C +C GND_D GND_D +5V6 +5V6 GND_M GND_A +12_A +12_M
AV
POWER MODULE
Refer to page 5-2 for details
1106FE
PWD_DN GND_D LPC GND_D +5V6_ECO MUX_DET MUX_VU GND_D TU_STEREO TU_CLK GND_D TU_DATA TU_ENABLE
8001 BD 13P 400mm Prefold
1238 FE
TU_ENABLE TU_DATA GND_D TU_CLK TU_STEREO GND_D MUX_VU MUX_DET/FM_DET +5V6_ECO GND_D LPC GND_D PWD_DN SD
for MX39/55/56/58/59
for i6000
1231 FE
L GND R AMP_ON CENTER GND_C AMP_ON_C NC FREQ_HOP ERR
8014 BD 10P 180mm Prefold
FE 1301
L GND R AMP_ON CENTER GND_C AMP_ON_C NTC FREQ_HOP ERR
1105
FRONT DISPLAY
MX55/56/58/59
MX3900D
+C Key1 Key0 RotaryVolB GND_B RotaryVolA Rot_Jog_B GND Rot_Jog_A LPS_LED RC6 Stdby_LED +D LedShStr LedShClk LedShData
8002 AD 17P 400mm Prefold
1239 FE
A0 A1 A2 I2C_CLK3 GND_D I2C_CLK2 GND_D I2C_CLK1 GND_D I2C_DATA DVD_ON DVD_5V +5V6 GND_D -Vkk/+12M ✓F1 ✓F2
for MX55/56/58/59 for MX3900D
1234FE
SUR_L GND_S SUR_R AMP_ON_SUR SUB-WOOFER GND_C NC NC NC NC
8013 BD 10P 180mm Prefold
FE 1305
SUR_L GND_S SUR_R AMP_ON_SUR SUB-WOOFER GND_C NC NC NC NC
1242 FMN
FMN 1401
1406
FMN
+C Sen_3V3 Sen_3V3/+3V3 +3V3 +3V3 GND_D GND_D GND_D +5V_DVD +5V_DVD +12V_M GND_D GND_D +5V_v -5V_v
for i6000 for MX39/55/56/58/59
13P 180mm (MX39/55/56)
13P 220mm (MX58)
8012 Prefold AD
10P 280mm (MX39/55/56)
14P 220mm (MX58)
8011 Prefold AD
8010 Prefold AD
16P/18P(K'ok) 180mm (MX39/55/56)
22P 220mm (MX58)
16P 220mm (MX59)
FMN 1501
Sen_3V3 +3V3 +3V3 GND_D GND_D GND_D +5V_DVD +5V_DVD +12V_M GND_D GND_D +5V_v -5V_v
13
1300 FMN
SCART 0 Mute_AV GND_V R_Pr GND_V C_B_Pb GND_V Y_G_Y GND_V CVBS GND_V Y GND_V C
10 14
for MX3900D for MX5800SA
1400 FMN
DVD_SC GND_Sc DVD_L GND_L DVD_R GND_R DVD_SUB GND_SUB DVD_Ls GND_S DVD_C GND_C DVD_Rs GND_S GND_d DIG_OUT DIG_IN_1 DIG_IN_2 GND_MIC MIC_IN GND_a DPL2_R GND_a DPL2_L
16 18 22
MX39/55/56/59 MX5800SA K'ok
DVD Module
Refer to page 5-3 for details
1104 FMN
1106 FE
I2C_CLK_DVD GND_D I2C_DATA_DVD DVD_IntReq DPL2_IntReq I2C_CLK1/DI_Ctrl GND_D I2C_DATA/DI_Lock
MX58/59 MX39/55/56
FE 1230
FE 1243
8003 AD 13P 100mm
8009 AD FFC 40P 280mm
40P FLT
1505
FMN 1302
I2C_CLK_DVD GND_D I2C_DATA_DVD DVD_IntReq DPL2_IntReq I2C_CLK1/DI_Ctrl GND_D I2C_DATA/DI_Lock
MX39/55/56 MX58/59
1300 FE
16 13
+C Key1 Key0 RotaryVolB GND_B RotaryVolA Rot_Jog_B GND Rot_Jog_A LPS_LED RC6 Stdby_LED +D LedShStr LedShClk LedShData
GND Stdby_LED RC6 LPS_LED Stdby_key GND_B +C
8006 AD Prefold 4P 340mm (non K'ok) 8P 340mm (K'ok)
FE 16021 FE 1601
HP_LEFT GND_A HP_RIGHT HP_DET MIC_DET GND_A MIC_OUT +12_A
HDPH & MIC
PCMCIA
FLT 40P 1542
for MX5500/5600
1316 EH
GND_B Key0
FRONT CONTROL
1313 FE
8004 2P 220mm
8005 AD Prefold 7P 340mm
8008 AD 4P 220mm (MX39/55/56) 8P 220mm (MX58/59)
1400 EH
DTC KEY
POWER SWITCH 1500 FE

5-2

WIRING DIAGRAM - POWER MODULE DETAILS

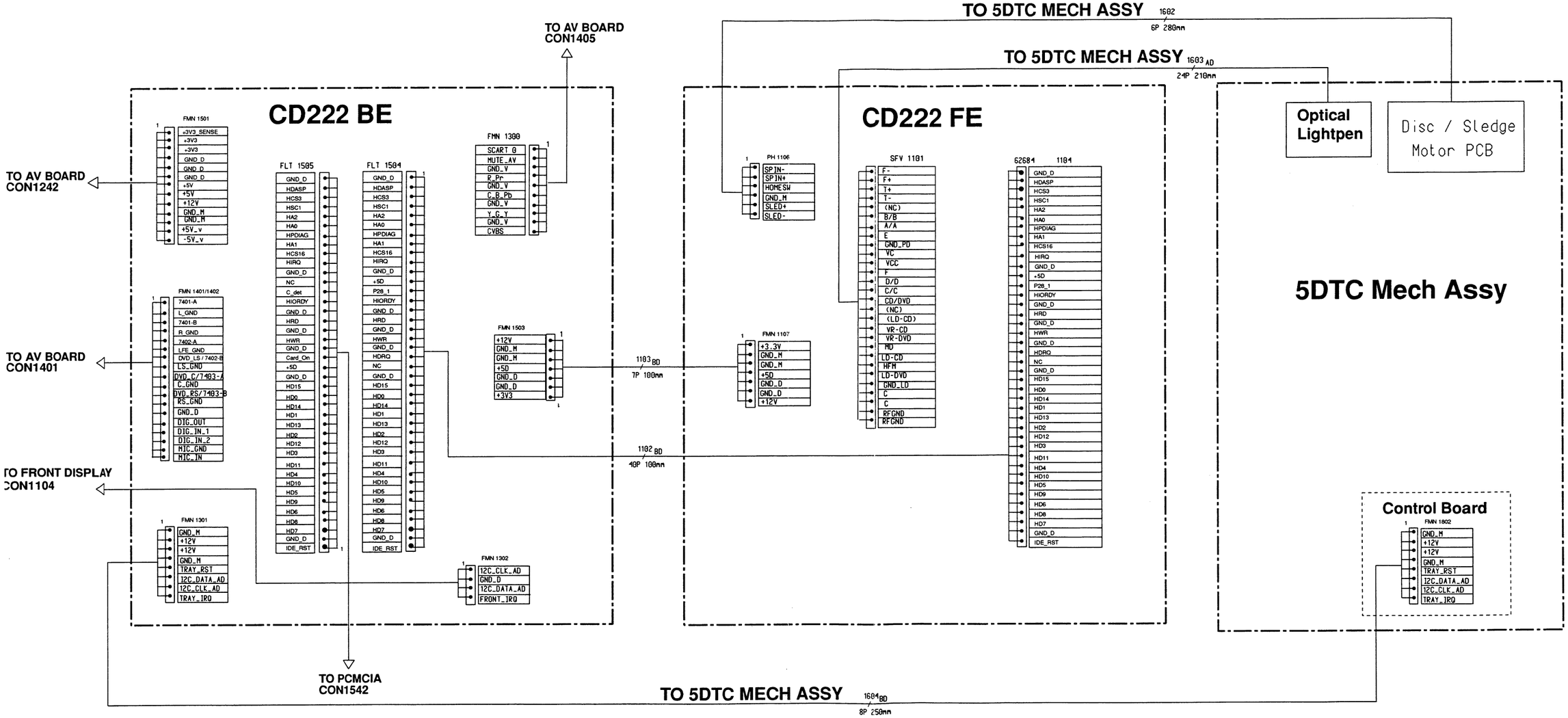


NOTE :

75W 6-CHANNEL : 1 X CLASS-D AMPLIFIER + SPK I
75W 7-CHANNEL : 1 X CLASS-D AMPLIFIER + SPK I + SPK II
100W : 2 X CLASS-D AMPLIFIER + SPK I + SPK II

5-3

WIRING DIAGRAM - DVD MODULE DETAILS



FRONT BOARDS

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HDPH & Mic parts 6-7
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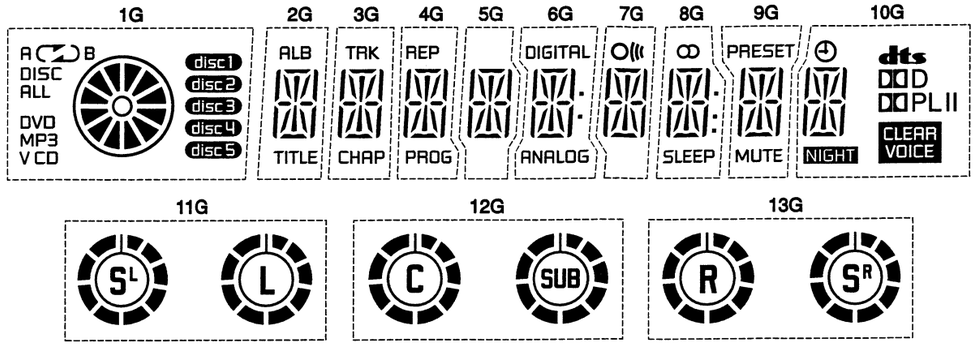
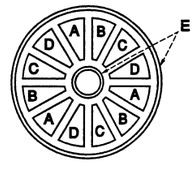
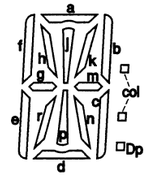
FTD DISPLAY PIN CONNECTIONS

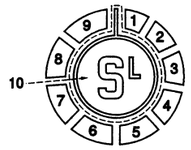




(1G)



(2G - 10G)



(11G - 13G)

	1G	2G	3G	4G	5G	6G	7G	8G	9G	10G	11G	12G	13G	
P1	A	a	a	a	a	a	a	a	a	a	SL1	C1	SR1	
P2		h	h	h	h	h	h	h	h	h	SL2	C2	SR2	
P3		j,p	j,p	j,p	j,p	j,p	j,p	j,p	j,p	j,p	SL3	C3	SR3	
P4	B	k	k	k	k	k	k	k	k	k	SL4	C4	SR4	
P5	DISC	b	b	b	b	b	b	b	b	b	SL5	C5	SR5	
P6	ALL	f	f	f	f	f	f	f	f	f	SL6	C6	SR6	
P7	DVD	m	m	m	m	m	m	m	m	m	SL7	C7	SR7	
P8	MP3	g	g	g	g	g	g	g	g	g	SL8	C8	SR8	
P9	V	c	c	c	c	c	c	c	c	c	SL9	C9	SR9	
P10	CD	e	e	e	e	e	e	e	e	e	SL10	C10	SR10	
P11	A	r	r	r	r	r	r	r	r	r	L1	SUB1	R1	
P12	B	n	n	n	n	n	n	n	n	n	L2	SUB2	R2	
P13	C	d	d	d	d	d	d	d	d	d	L3	SUB3	R3	
P14	D	ALB	TRK	REP	-	col		col	PRESET		L4	SUB4	R4	
P15	E	TITLE	CHAP	PROG	-	DIGITAL	-	Dp	MUTE	NIGHT	L5	SUB5	R5	
P16	disc1	-	-	-	-	ANALOG	-		-	dts	L6	SUB6	R6	
P17	disc2	-	-	-	-	-	-	SLEEP	-	D D	L7	SUB7	R7	
P18	disc3	-	-	-	-	-	-	-	-	D PL	L8	SUB8	R8	
P19	disc4	-	-	-	-	-	-	-	-	II	L9	SUB9	R9	
P20	disc5	-	-	-	-	-	-	-	-	CLEAR VOICE	L10	SUB10	R10	

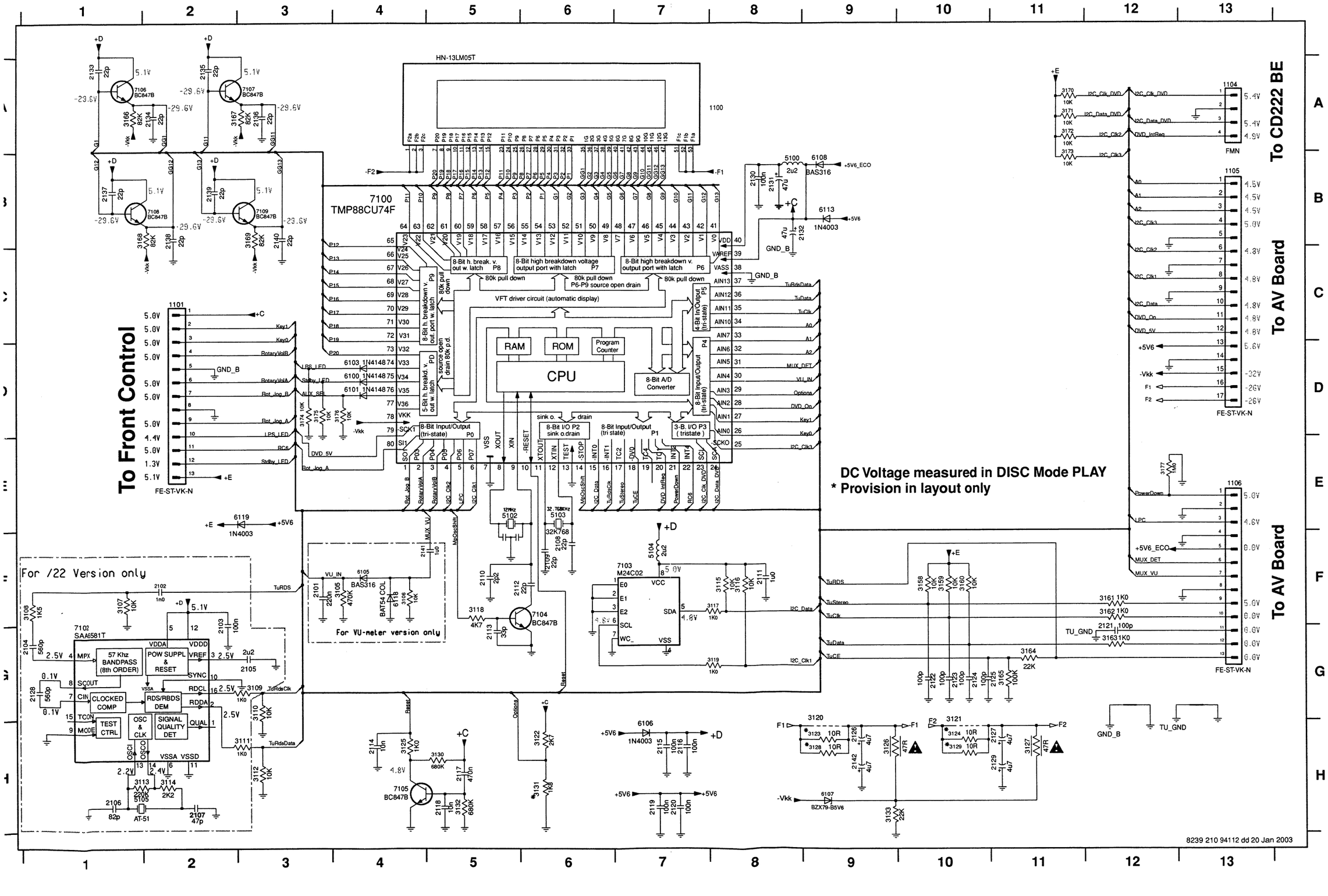
FTD DISPLAY PIN NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
FUNCTION	F2	F2	F2	NP	NP	NX	P20	P19	P18	P17	P16	P15	P14	P13	P12	NX	NX	NX	NX	NX	NX	NX	P11	P10	P9	P8	P7	P6	P5	P4	P3	P2	P1	NX	1G	2G	3G	4G
FTD DISPLAY PIN NO.	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53																							
FUNCTION	5G	6G	7G	8G	9G	10G	11G	12G	13G	NX	NP	NP	F1	F1	F1																							

Note: Fn : Filament pin
nG : Grid pin
Pn : Anode pin
NP : No Pin
MX : No extended pin

6-2

FRONT DISPLAY PART - CIRCUIT DIAGRAM

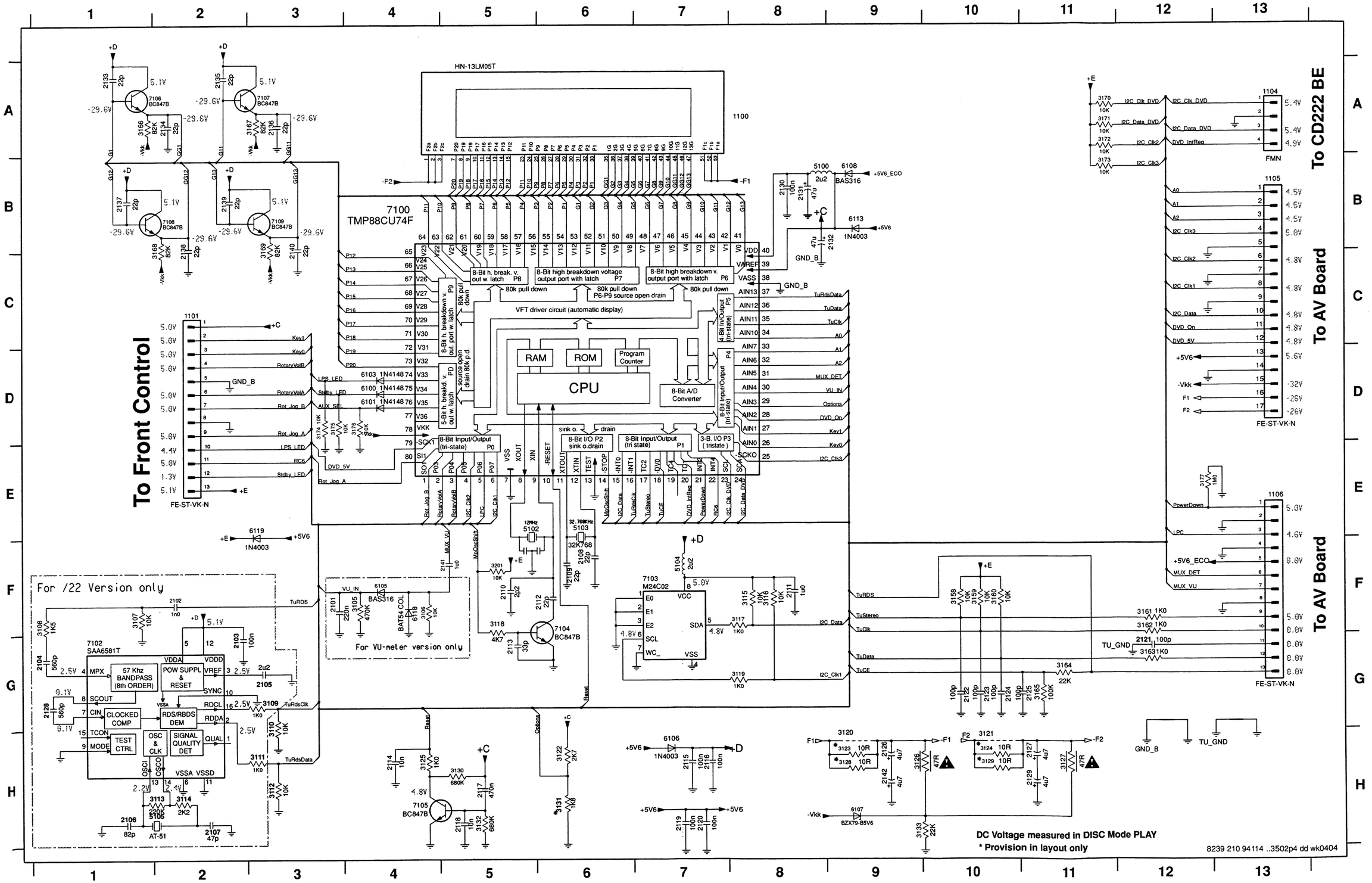
1100 A8	1106 E13	2104 G1	2108 F6	2112 F5	2116 H7	2120 H7	2124 G10	2128 G1	2132 B8	2136 A3	2140 B3	3106 F4	3110 G3	3114 H2	3118 F5	3122 H6	3126 H9	3130 H5	3158 F10	3162 F12	3166 A1	3170 A11	3174 D3	5100 B8	5105 H1	6105 F4	6113 B9	7104 F6	7108 B2
1101 C2	2101 F3	2105 G3	2109 F6	2113 G5	2117 H5	2121 G12	2125 G11	2129 H11	2133 A1	2137 B1	2141 F4	3107 F1	3111 H3	3115 F8	3119 G8	3123 H9	3127 H11	3131 H6	3159 F10	3163 G12	3167 A2	3171 A11	3175 D3	5102 E5	6100 D4	6106 H7	6118 F4	7105 H4	7109 B3
1104 A13	2102 F2	2106 H1	2110 F5	2114 H4	2118 H5	2122 G10	2126 H9	2130 B8	2134 A2	2138 B2	2142 H9	3108 F1	3112 H3	3116 F8	3120 G9	3124 H10	3128 H9	3132 H5	3160 F10	3164 G11	3168 B1	3172 A11	3176 D4	5103 E6	6101 D4	6107 H9	6119 E3	7106 A1	
1105 B13	2103 F2	2107 H2	2111 F8	2115 H7	2119 H7	2123 G10	2127 H11	2131 B8	2135 A2	2139 B2	3105 F4	3109 G3	3113 H1	3117 F8	3121 H10	3125 H4	3129 H10	3133 H9	3161 F12	3165 G11	3169 B3	3173 B11	3177 E12	5104 F7	6103 D4	6108 B9	7103 F7	7107 A3	



6-2a

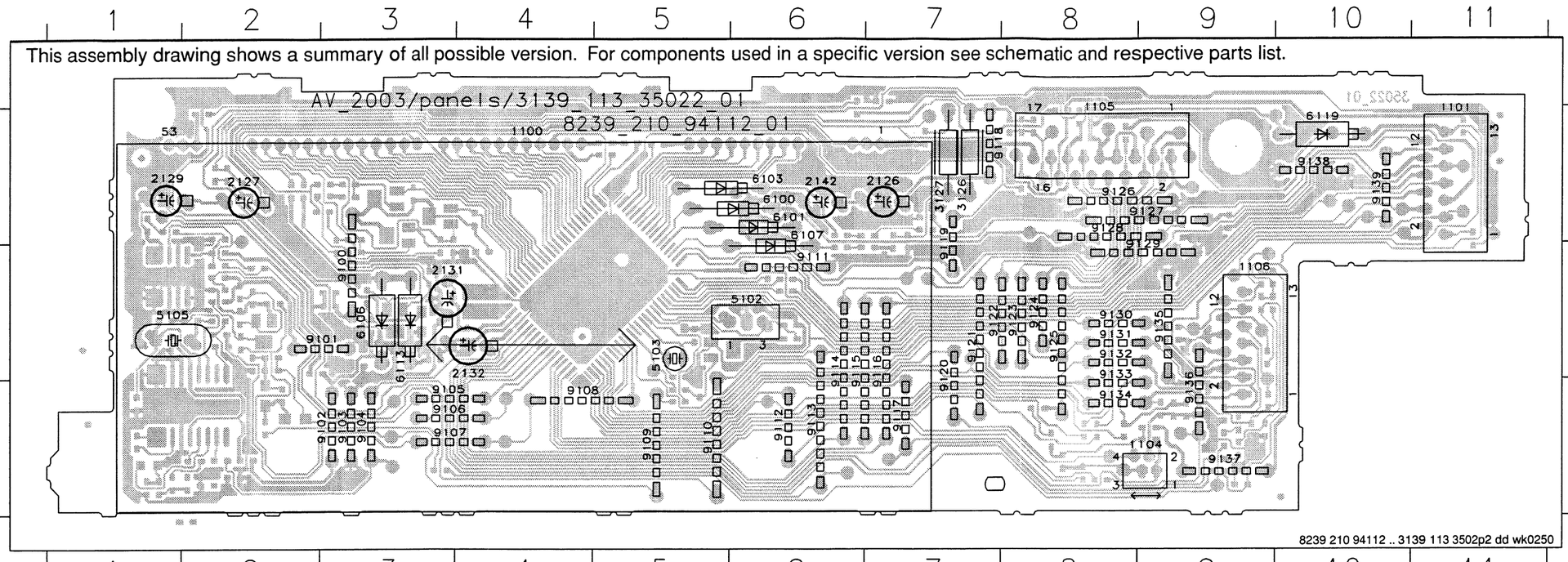
FRONT DISPLAY PART - CIRCUIT DIAGRAM (For pt 4 board)

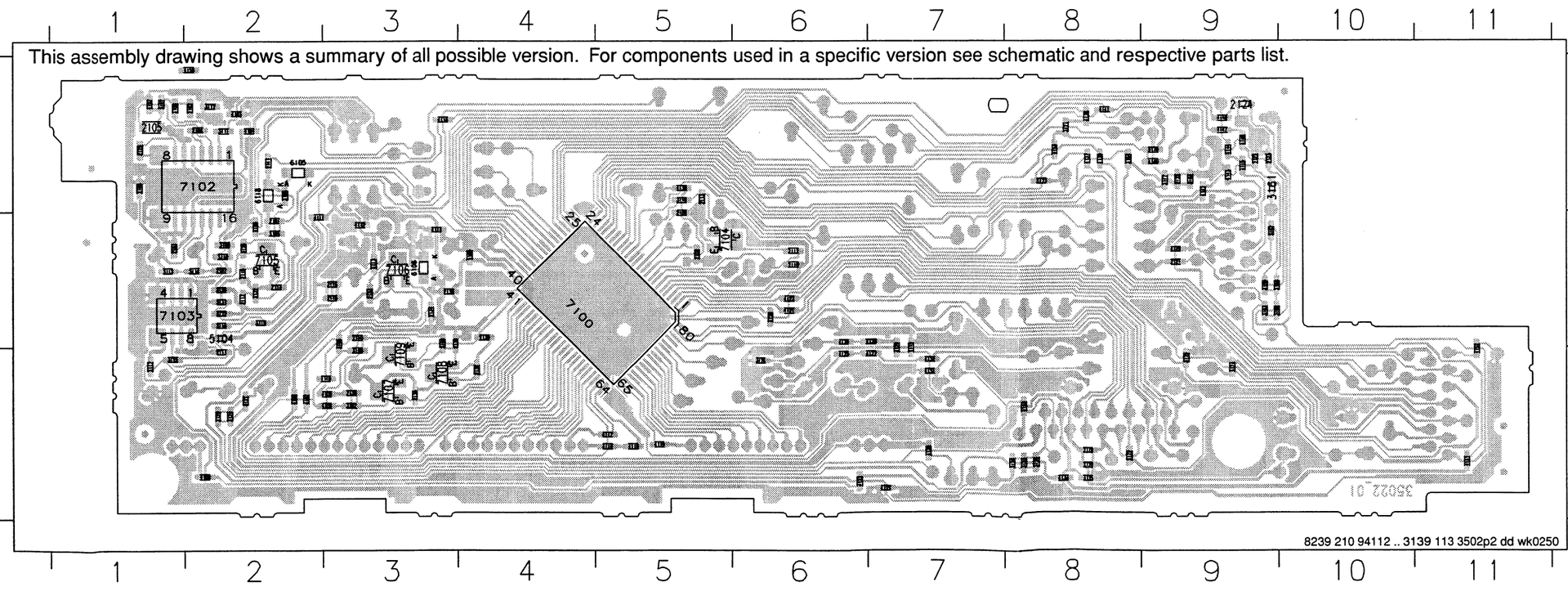
1101 C2	2101 F3	2105 G3	2109 F6	2113 G5	2117 H5	2121 G12	2125 G11	2129 H11	2133 A1	2137 B1	2141 F5	3107 F1	3111 H3	3115 F8	3119 G8	3123 H9	3127 H11	3131 H6	3159 F10	3163 G12	3167 A3	3171 A11	3175 D3	5100 B8	5105 H2	6105 F4	6113 B9	7104 F6	7108 B2
1104 A13	2102 F2	2106 H1	2110 F5	2114 H4	2118 H5	2122 G10	2126 H9	2130 B8	2134 A2	2138 B2	2142 H9	3108 F1	3112 H3	3116 F8	3120 H9	3124 H10	3128 H9	3132 H5	3160 F10	3164 G11	3168 B2	3172 A11	3176 D4	5102 E5	6100 D4	6106 H7	6118 F4	7105 H4	7109 B3
1105 B13	2103 G2	2107 H2	2111 F8	2115 H7	2119 H7	2123 G10	2127 H11	2131 B8	2135 A2	2139 B2	3105 F4	3109 G3	3113 H2	3117 F8	3121 H10	3125 H4	3129 H10	3133 H9	3161 F12	3165 G11	3169 B3	3173 B11	3177 E12	5103 E6	6101 D4	6107 H9	6119 E3	7106 A1	
1106 E13	2104 G1	2108 F6	2112 F5	2116 H7	2120 H7	2124 G10	2128 G1	2132 B9	2136 A3	2140 B3	3106 F4	3110 G3	3114 H2	3118 F5	3122 H6	3126 H9	3130 H5	3158 F10	3162 F12	3166 A1	3170 A11	3174 D3	3201 F5	5104 F7	6103 D4	6108 B9	7103 E7	7107 A3	



6-3

FRONT DISPLAY PART - COMPONENT & CHIPS LAYOUT


This assembly drawing shows a summary of all possible version. For components used in a specific version see schematic and respective parts list.
AV_2003/panels/3139_113_35022_01
1100 8239_210_94112_01
8239 210 94112 .. 3139 113 3502p2 dd wk0250


This assembly drawing shows a summary of all possible version. For components used in a specific version see schematic and respective parts list.
7102
7103
7100
8239 210 94112 .. 3139 113 3502p2 dd wk0250

1100 A4
1101 A11
1104 C9
1105 A8
1106 B9
2126 A7
2127 A2
2129 A1
2131 B3
2132 B4
2142 A6
3126 A7
3127 A7
5102 B6
5103 B5
5105 B1
6100 A6
6101 A6
6103 A6
6106 B3
6107 A6
6113 B3
6119 A10
9100 B3
9101 B3
9102 C3
9103 C3
9104 C3
9105 C3
9106 C3
9107 C3
9108 C4
9109 C5
9110 B6
9111 B6
9112 C6
9113 C6
9114 B6
9115 B6
9116 B6
9117 C7
9118 A7
9119 B7
9120 B7
9121 B7
9122 B7
9123 B8
9124 B8
9125 B8
9126 A8
9127 A9
9128 A8
9129 B9
9130 B8
9131 B8
9132 B8
9133 B8
9134 C8
9135 C8
9136 C8
9137 A8
9138 A9
9139 A10
2101 B2
2102 A2
2103 B1
2104 A2
2105 A1
2106 A1
2107 B2
2108 B5
2109 B5
2110 B6
2111 B2
2112 B6
2113 A5
2114 B2
2115 B3
2116 B5
2117 B2
2118 B2
2119 C8
2120 C8
2121 B9
2122 A9
2123 A9
2124 A9
2125 A9
2128 A1
2130 B3
2133 B3
2134 B3
2135 C3
2136 C3
2137 C4
2138 B3
2139 B4
2140 B3
2141 A2
3105 B2
3106 A2
3107 A1
3108 A1
3109 B2
3110 B2
3111 A2
3112 A2
3113 B1
3114 B2
3115 C1
3116 B2
3117 C1
3118 A5
3119 B2
3120 C5
3121 C5
3122 B2
3123 C8
3124 C2
3125 B2
3126 B6
3128 B6
3129 C2
3130 B2
3131 B2
3132 B2
3133 C2
3158 B9
3159 B9
3160 B9
3161 A9
3162 B9
3163 B9
3164 A8
3165 A9
3166 B3
3167 C3
3168 B3
3169 B3
3170 A9
3171 A8
3172 C8
3173 A8
3174 C9
3175 C9
3176 C6
3177 A9
4100 C2
4102 A1
4103 A2
4104 A2
4105 B2
4106 C2
4107 C2
4108 C3
4109 C3
4110 C3
4111 B2
4112 B3
4113 B3
4114 B3
4115 A3
4116 C5
4117 C5
4118 C5
4119 C5
4120 B6
4121 B6
4122 B6
4123 C6
4124 C7
4125 C6
4126 B7
4127 C7
4128 B7
4129 C7
4130 C7
4131 C7
4132 C7
4133 C8
4134 C8
4135 C8
4136 A8
4137 A8
4138 A8
4139 A8
4140 A9
4141 A8
4142 A9
4143 A9
4144 A9
4145 A9
4146 A9
4147 A9
4148 A9
4149 B9
4150 A2
4151 C11
4152 C11
4153 A8
5100 B2
5104 B2
6105 A2
6108 B3
6118 A2
7100 B4
7102 A2
7103 B1
7104 B5
7105 B2
7106 B3
7107 C3
7108 C3
7109 C3

6-3a

FRONT DISPLAY PART - COMPONENT & CHIPS LAYOUT (pt 4 board)

1100 A4
1101 A11
1104 C9
1105 A8
1106 B9

2126 A7
2127 A2
2129 A1
2131 B3
2132 B4

2142 A6
3126 A7
3127 A7
5102 B6
5103 B5

5105 B1
6100 A6
6101 A6
6103 A6
6106 B3

6107 A6
6113 B3
6119 A10
9100 B3
9101 B3

9102 C3
9103 C3
9104 C3
9105 C3
9106 C3

9107 C3
9108 C4
9109 C5
9110 C5
9111 B6

9112 C6
9113 C6
9114 B6
9115 B6
9116 B7

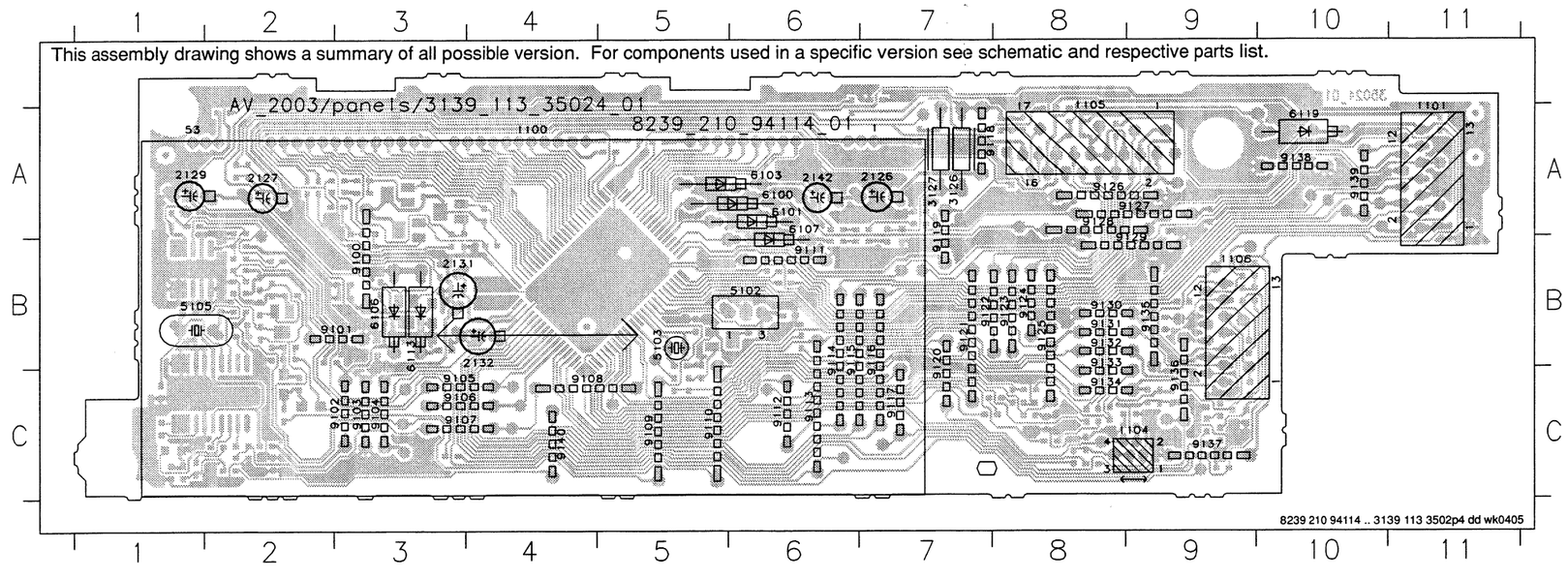
9117 C7
9118 A7
9119 B7
9120 B7
9121 B7

9122 B7
9123 B8
9124 B8
9125 B8
9126 A8

9127 A9
9128 A8
9129 B9
9130 B8
9131 B8

9132 B8
9133 B8
9134 C8
9135 C9
9136 C9

9137 C9
9138 A10
9139 A10
9140 C4


This assembly drawing shows a summary of all possible version. For components used in a specific version see schematic and respective parts list.
AV_2003/panels/3139_113_35024_01
8239_210_94114_01
8239 210 94114 .. 3139 113 3502p4 dd wk0405

2101 B2
2102 A2
2103 B1
2104 A2
2105 A1
2106 A1
2107 B2
2108 B5
2109 B5
2110 B6
2111 C2

2112 B6
2113 A5
2114 B2
2115 B3
2116 B3
2117 B2
2118 B2
2119 C8
2120 C8
2121 B9
2122 A9

2123 A9
2124 A9
2125 A9
2128 A1
2130 B3
2133 B3
2134 B3
2135 C3
2136 C3
2137 C4
2138 B3

2139 B4
2140 B3
2141 A2
3105 B2
3106 A2
3107 A1
3108 A1
3109 B2
3110 B2
3111 A2
3112 A2

3113 B1
3114 B2
3115 C1
3116 B2
3117 C1
3118 A5
3119 B2
3120 C8
3121 C2
3122 B2
3123 C8

3124 C2
3125 B2
3128 C8
3129 C2
3130 B2
3131 B2
3132 B2
3133 C7
3158 B9
3159 B9
3160 B9

3161 A9
3162 B9
3163 B9
3164 A8
3165 A9
3166 B3
3167 C3
3168 B3
3169 C3
3170 A9
3171 A8

3172 C8
3173 A8
3174 C9
3175 C9
3176 C6
3177 A9
3201 B7
4100 C2
4102 A1
4103 A2
4104 A2

4105 B2
4106 C2
4107 C2
4108 C3
4109 C3
4110 C3
4111 B2
4112 B3
4113 B3
4114 B3
4115 A3

4116 C5
4117 C5
4118 C5
4119 C5
4120 B6
4121 B6
4122 B6
4123 C6
4124 C7
4125 C6
4126 B6

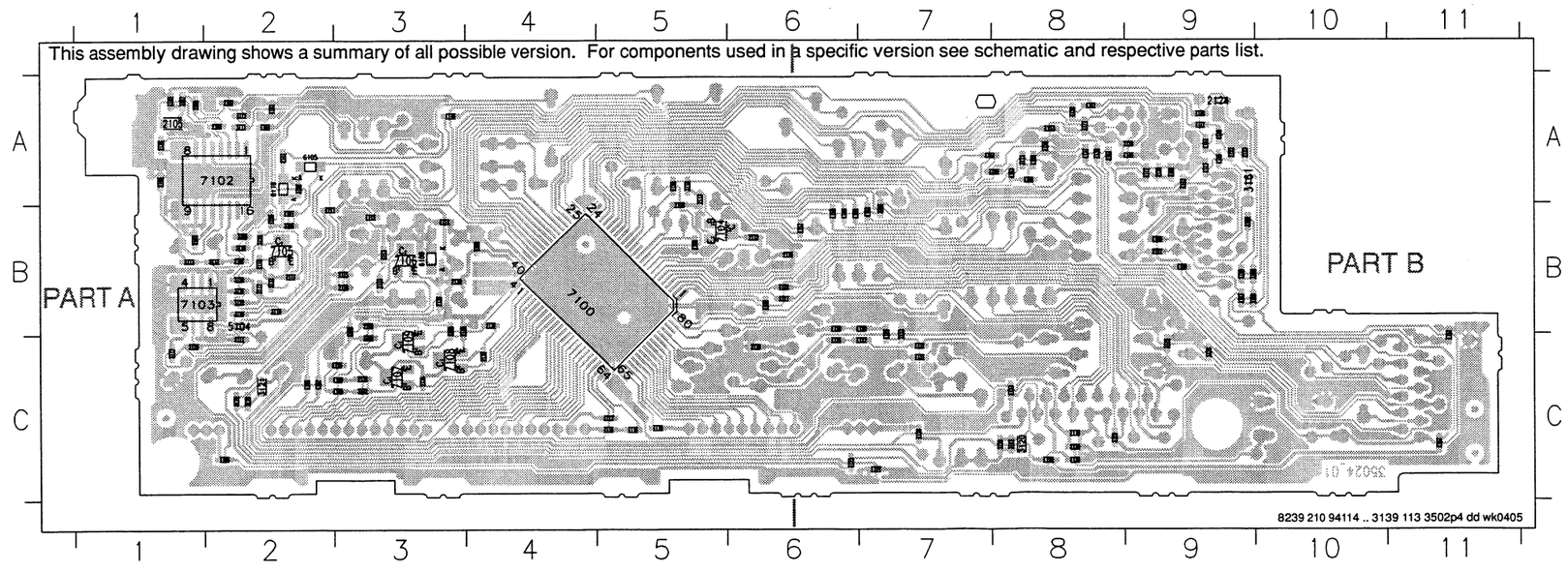
4127 C7
4128 B7
4129 C7
4130 C7
4131 C7
4132 C7
4133 C8
4134 C8
4135 C8
4136 A5
4137 A8

4138 A8
4139 A8
4140 A9
4141 A8
4142 A9
4143 A9
4144 A9
4145 A9
4146 A9
4147 A9
4148 A9

4149 B9
4150 B9
4151 C11
4152 C11
4153 A8
4154 A7
4155 A8
4156 A8
4157 B6
4158 B6
4159 B6

4160 B6
4162 B7
4163 A8
4164 A8
4165 A8
5100 B4
5104 B2
6105 A2
6108 B3
6118 A2
7100 B4

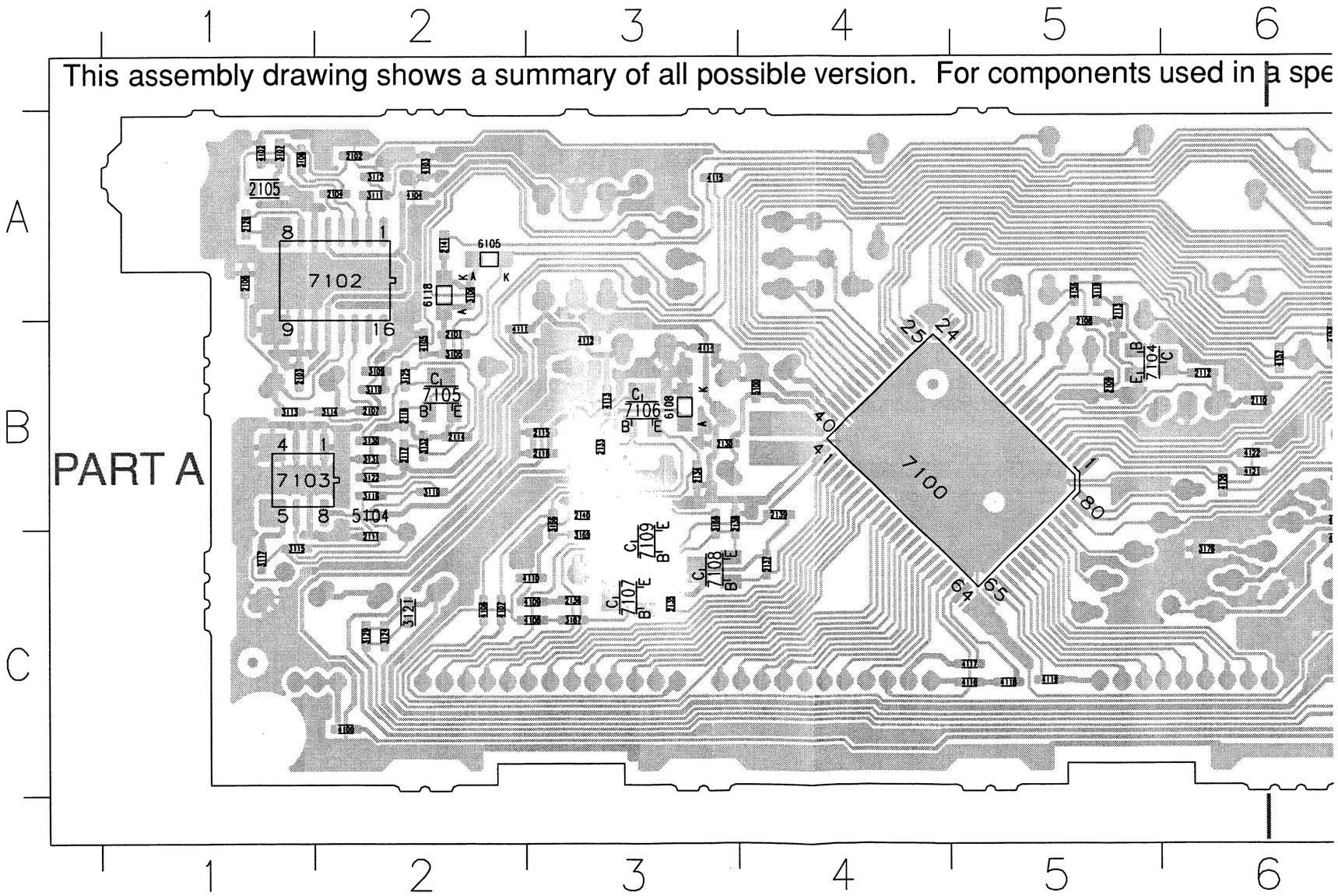
7102 A2
7103 B1
7104 B1
7105 B2
7106 B3
7107 C3
7108 C3
7109 C3


This assembly drawing shows a summary of all possible version. For components used in a specific version see schematic and respective parts list.
PART A
PART B
8239 210 94114 .. 3139 113 3502p4 dd wk0405

6-3b

FRONT DISPLAY PART - CHIPS LAYOUT (pt 4 board) PART A

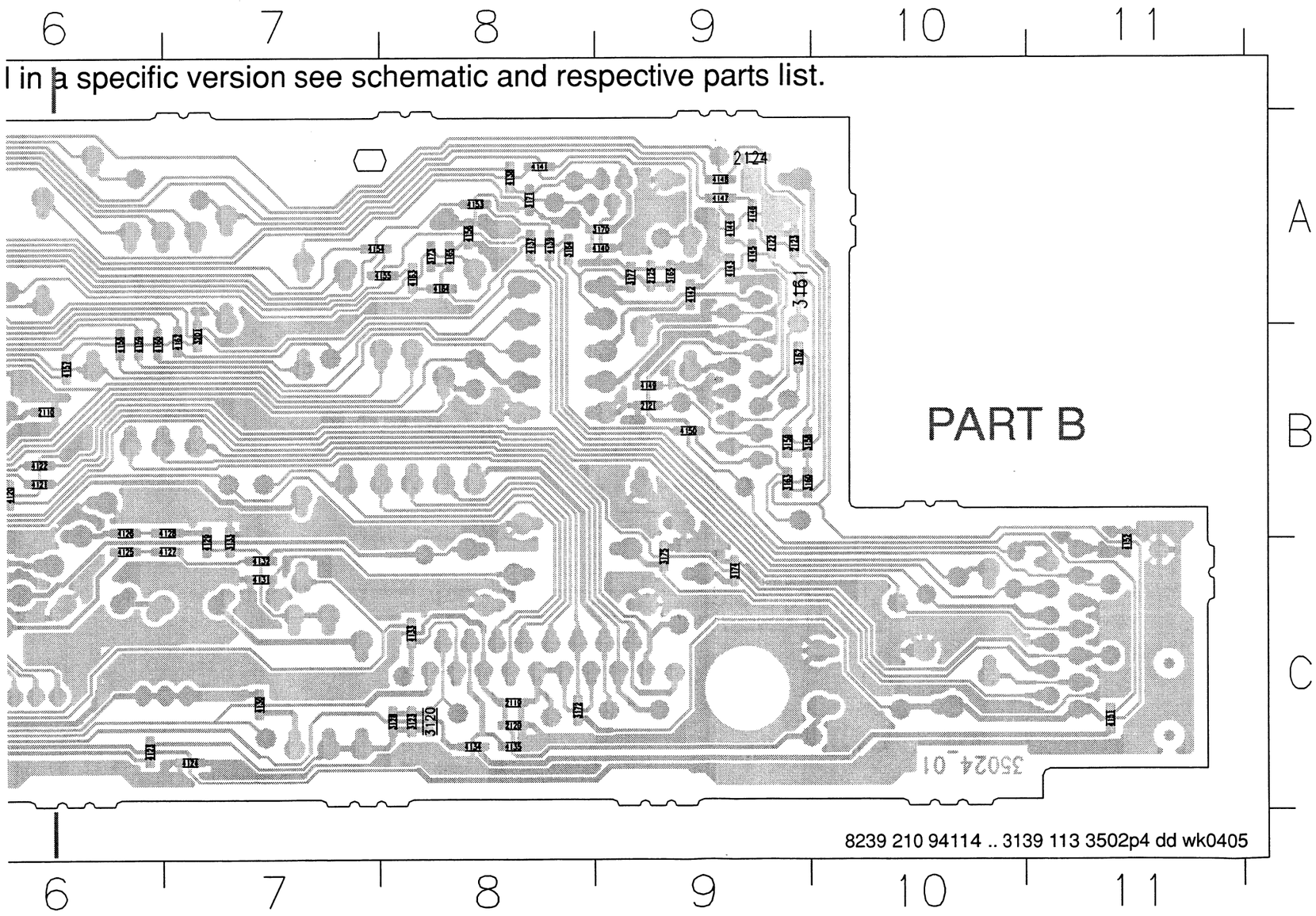
2101	B2	2112	B6	2123	A9	2139	B4	3113	B1	3124	C2	3161	A9	3172	C8
2102	A2	2113	A5	2124	A9	2140	B3	3114	B2	3125	B2	3162	B9	3173	A8
2103	B1	2114	B2	2125	A9	2141	A2	3115	C1	3128	C8	3163	B9	3174	C9
2104	A2	2115	B3	2128	A1	3105	B2	3116	B2	3129	C2	3164	A8	3175	C9
2105	A1	2116	B3	2130	B3	3106	A2	3117	C1	3130	B2	3165	A9	3176	C6
2106	A1	2117	B2	2133	B3	3107	A1	3118	A5	3131	B2	3166	B3	3177	A9
2107	B2	2118	B2	2134	B3	3108	A1	3119	B2	3132	B2	3167	C3	3201	B7
2108	B5	2119	C8	2135	C3	3109	B2	3120	C8	3133	C7	3168	B3	4100	C2
2109	B5	2120	C8	2136	C3	3110	B2	3121	C2	3158	B9	3169	C3	4102	A1
2110	B6	2121	B9	2137	C4	3111	A2	3122	B2	3159	B9	3170	A9	4103	A2
2111	C2	2122	A9	2138	B3	3112	A2	3123	C8	3160	B9	3171	A8	4104	A2



6-3c

FRONT DISPLAY PART - CHIPS LAYOUT (pt 4 board) PART B

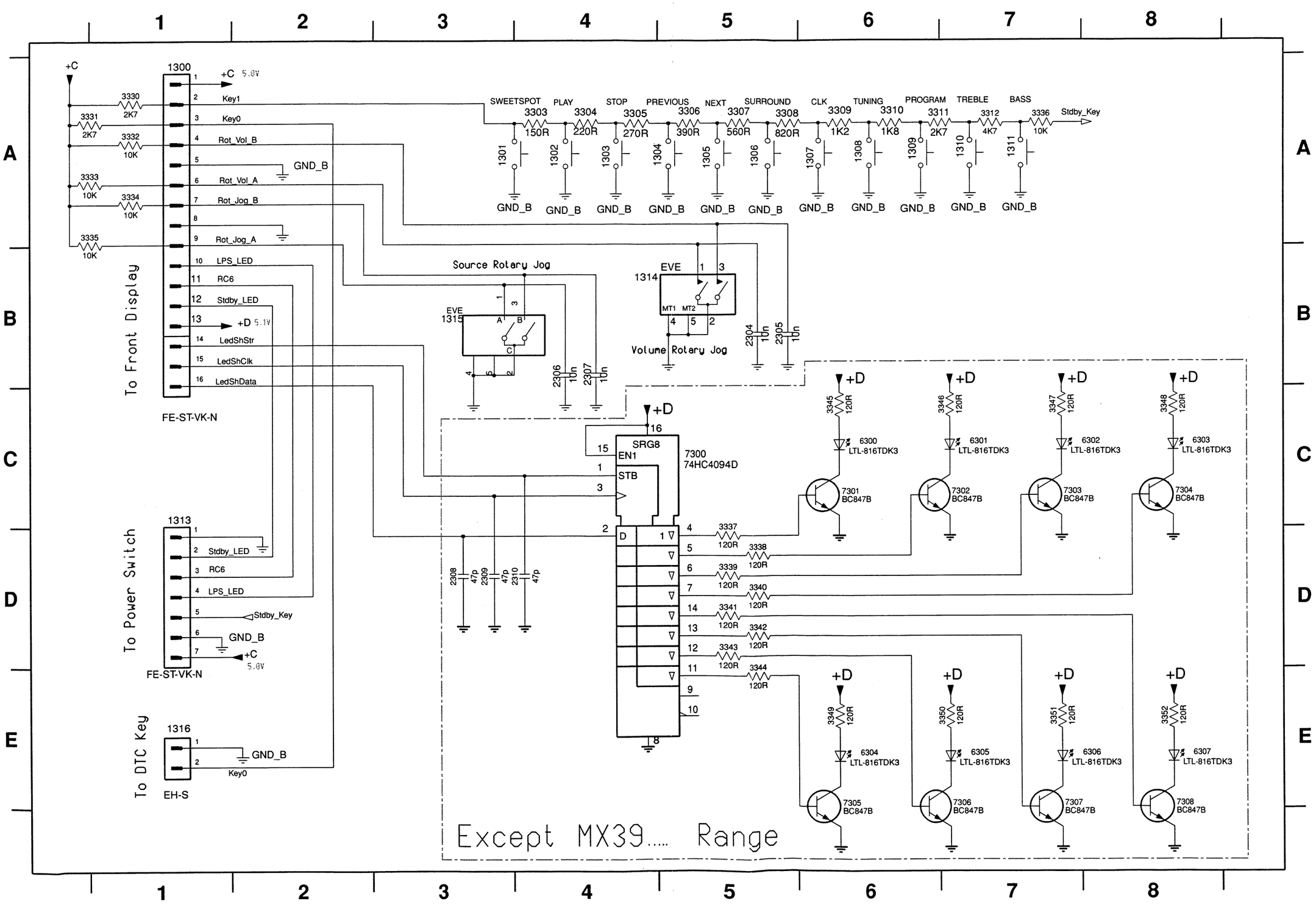
72 C8	4105 B2	4116 C5	4127 C7	4138 A8	4149 B9	4160 B6	7102 A2
73 A8	4106 C2	4117 C5	4128 B7	4139 A8	4150 B9	4162 B7	7103 B1
74 C9	4107 C2	4118 C5	4129 C7	4140 A9	4151 C11	4163 A8	7104 B5
75 C9	4108 C3	4119 C5	4130 C7	4141 A8	4152 C11	4164 A8	7105 B2
76 C6	4109 C3	4120 B6	4131 C7	4142 A9	4153 A8	4165 A8	7106 B3
77 A9	4110 C3	4121 B6	4132 C7	4143 A9	4154 A7	5100 B4	7107 C3
201 B7	4111 B2	4122 B6	4133 C8	4144 A9	4155 A8	5104 B2	7108 C3
300 C2	4112 B3	4123 C6	4134 C8	4145 A9	4156 A8	6105 A2	7109 C3
302 A1	4113 B3	4124 C7	4135 C8	4146 A9	4157 B6	6108 B3	
303 A2	4114 B3	4125 C6	4136 A5	4147 A9	4158 B6	6118 A2	
304 A2	4115 A3	4126 B6	4137 A8	4148 A9	4159 B6	7100 B4	



6-4

RONT CONTROL PART - CIRCUIT DIAGRAM

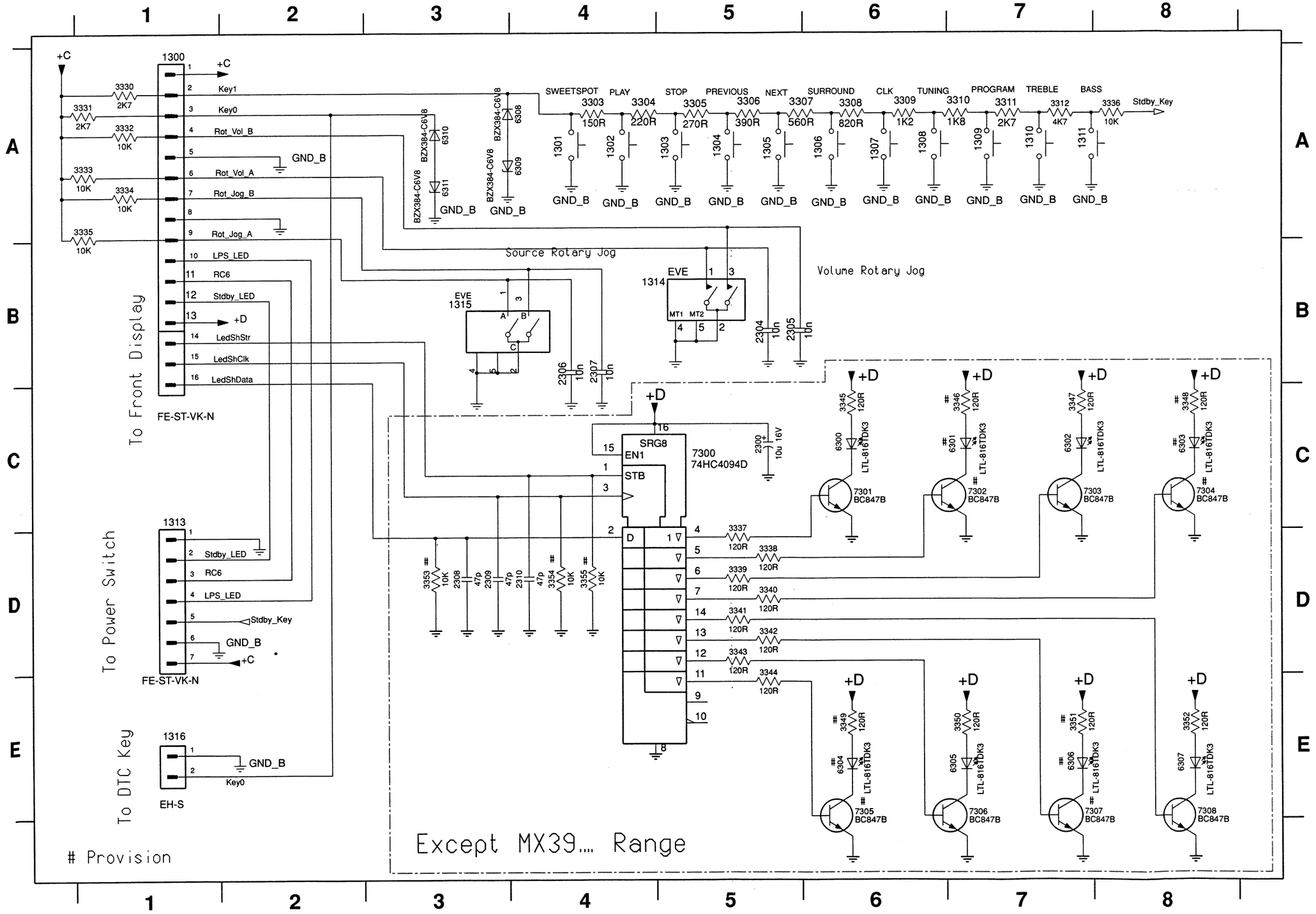
1300 A1	1304 A4	1308 A6	1313 C1	2304 B5	2308 D3	3304 A4	3308 A5	3312 A7	3333 A1	3337 D5	3341 D5	3345 C6	3349 E6	6300 C6	6304 E6	7300 C5	7304 C8	7308 E8	
1301 A3	1305 A5	1309 A6	1314 B4	2305 B5	2309 D3	3305 A4	3309 A6	3330 A1	3334 A1	3338 D5	3342 D5	3346 C7	3350 E7	6301 C7	6305 E7	7301 C6	7305 E6		
1302 A4	1306 A5	1310 A7	1315 B3	2306 B4	2310 D4	3306 A5	3310 A6	3331 A1	3335 A1	3339 D5	3343 D5	3347 C7	3351 E7	6302 C8	6306 E8	7302 C7	7306 E7		
1303 A4	1307 A6	1311 A7	1316 E1	2307 B4	3303 A4	3307 A5	3311 A6	3332 A1	3336 A7	3340 D5	3344 E5	3348 C8	3352 E8	6303 C8	6307 E8	7303 C7	7307 E7		



6-4a

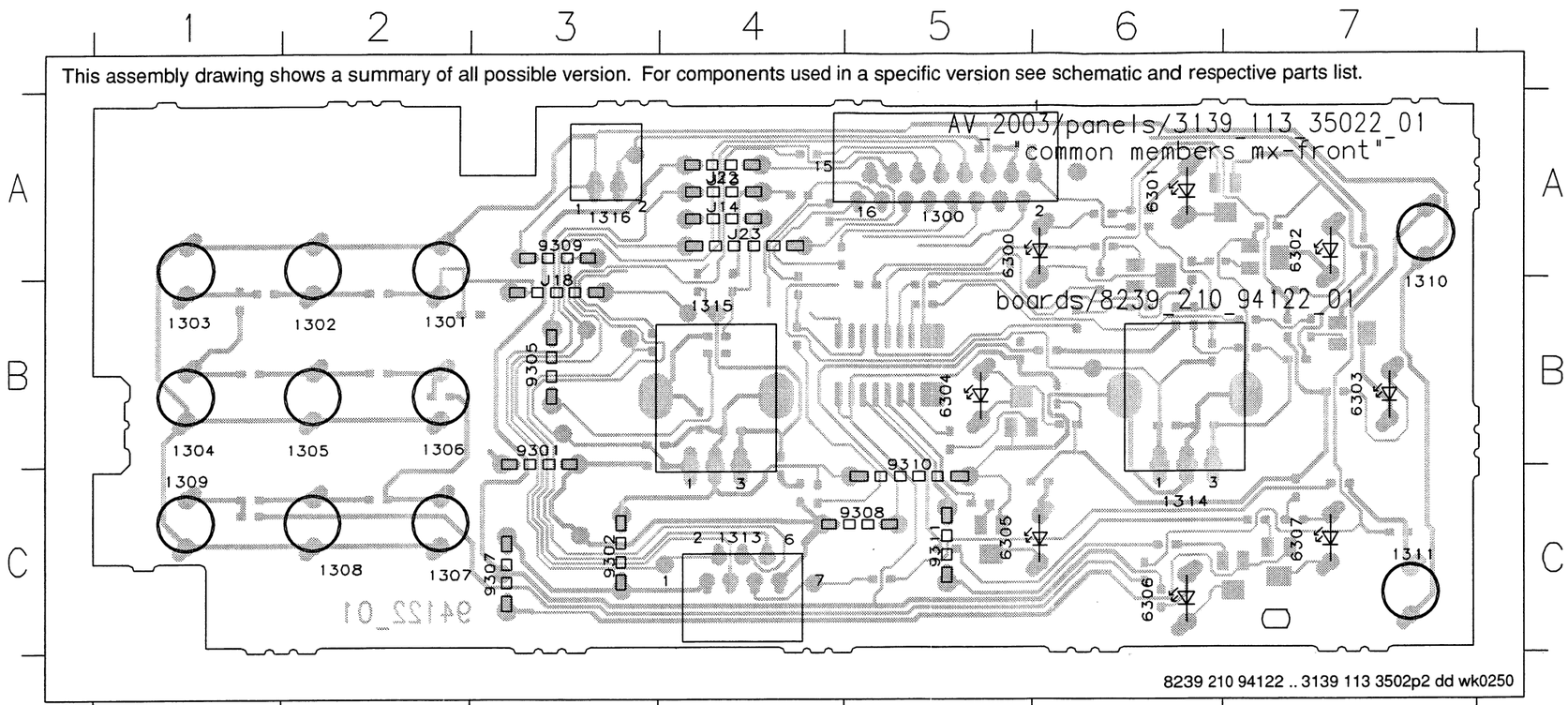
FRONT CONTROL PART - CIRCUIT DIAGRAM (For pt 4 board)

1300 A1	1304 A5	1308 A6	1313 C1	2300 C5	2307 B4	3303 A4	3307 A5	3311 A7	3332 A1	3336 A8	3340 D5	3344 E5	3348 C8	3352 E8	6300 C6	6304 E6	6308 A4	7300 C5	7304 C8	7308 E8
1301 A4	1305 A5	1309 A7	1314 B4	2304 B5	2308 D3	3304 A4	3308 A6	3312 A7	3333 A1	3337 D5	3341 D5	3345 C6	3349 E6	3353 D3	6301 C7	6305 E7	6309 A4	7301 C6	7305 E6	
1302 A4	1306 A6	1310 A7	1315 B3	2305 B5	2309 D3	3305 A5	3309 A6	3330 A1	3334 A1	3338 D5	3342 D5	3346 C7	3350 E7	3354 D4	6302 C7	6306 E7	6310 A3	7302 C7	7306 E7	
1303 A5	1307 A6	1311 A7	1316 E1	2306 B4	2310 D4	3306 A5	3310 A7	3331 A1	3335 A1	3339 D5	3343 D5	3347 C7	3351 E7	3355 D4	6303 C8	6307 E8	6311 A3	7303 C7	7307 E7	

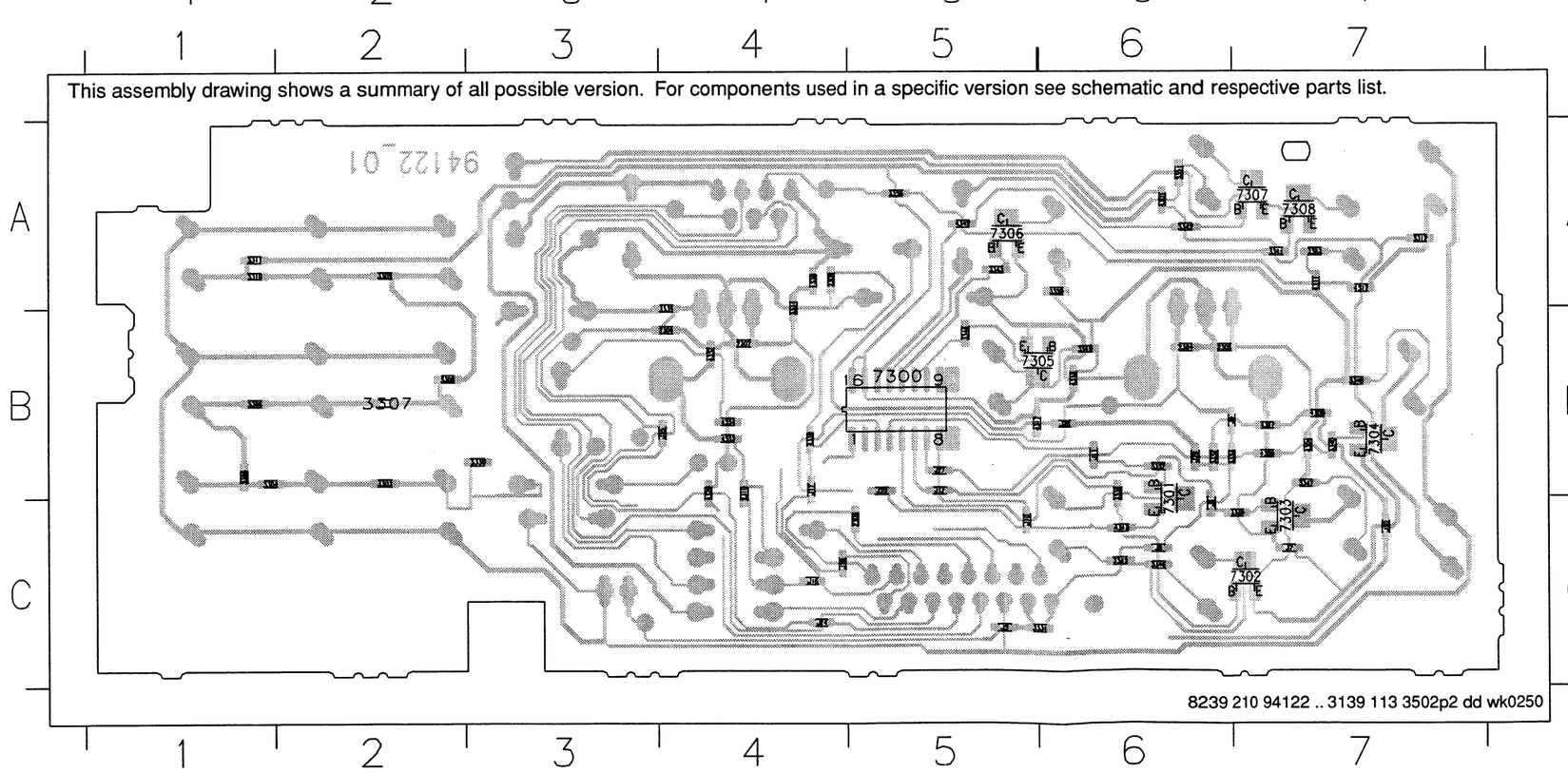


6-5

FRONT CONTROL PART - COMPONENT & CHIPS LAYOUT



J13 A4
J14 A4
J18 B3
J22 A4
J23 A4
1300 A5
1301 B2
1302 B2
1303 B1
1304 B1
1305 B2
1306 B2
1307 C2
1308 C2
1309 C1
1310 B7
1311 C7
1313 C4
1314 C6
1315 B4
1316 A3
6300 A5
6301 A6
6302 A7
6303 B7
6304 B5
6305 C5
6306 C6
6307 C7
9301 B3
9302 B3
9305 B3
9307 C3
9308 C5
9309 A3
9310 B5
9311 C5



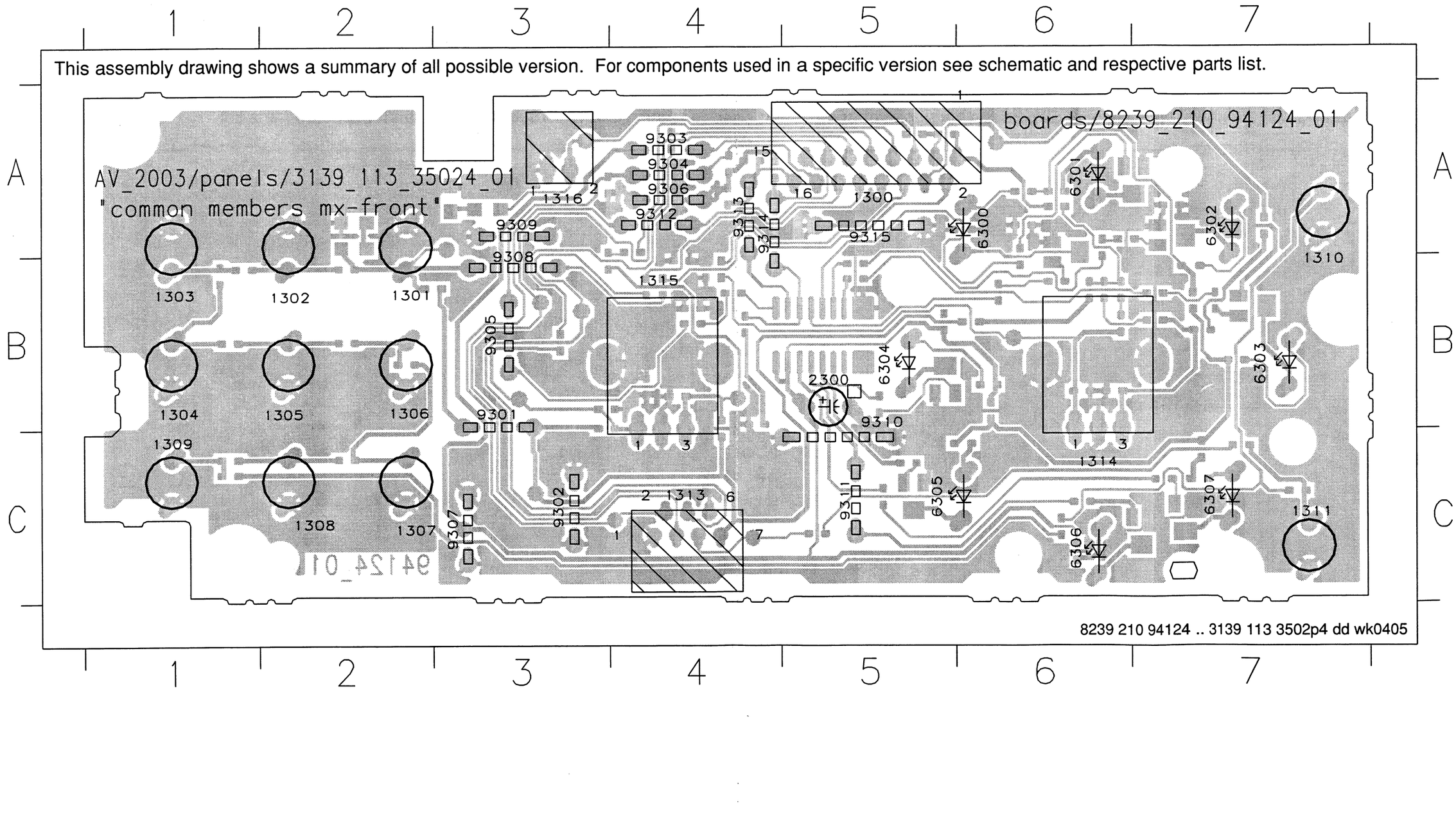
J3 C5
J6 C6
J7 C7
J8 C6
J9 B6
J10 C5
J11 B6
J12 B5
J16 C4
J17 B4
J20 B5
J24 C4
J25 B4
J26 C4
J27 B5
J28 B6
J29 B6
J30 C7
2304 B6
2305 B6
2306 B4
2307 B4
2308 C5
2309 A4
2310 B4
3303 B2
3304 B1
3305 B1
3306 B1
3307 B2
3308 B2
3309 A2
3310 A1
3311 A1
3312 A7
3330 B3
3331 C6
3332 B6
3333 B6
3334 A4
3335 B4
3336 A5
3337 B6
3338 B6
3339 C7
3340 B7
3341 A7
3342 A6
3343 A5
3344 B5
3345 C5
3346 C6
3347 B7
3348 B7
3349 B6
3350 A6
3351 A6
3352 A7
4301 A6
4304 B7
4306 B7
4307 B7
4309 B7
4311 A7
4312 A7
4317 B5
4318 B6
4329 B4
4332 B4
4334 B4
4337 B4
4338 A4
4339 B4
4342 A5
4343 C6
7300 B5
7301 C6
7302 C7
7303 C7
7304 B7
7305 B5
7306 A5
7307 A7
7308 A7

6-5a

FRONT CONTROL PART - COMPONENT LAYOUT (For pt 4 board)

1300	A5	1304	B1	1308	C2	1313	C4	2300	B5	6303	B7
1301	B2	1305	B2	1309	C1	1314	C6	6300	A6	6304	B5
1302	B2	1306	B2	1310	B7	1315	B4	6301	A6	6305	C5
1303	B1	1307	C2	1311	C7	1316	A3	6302	A7	6306	C6

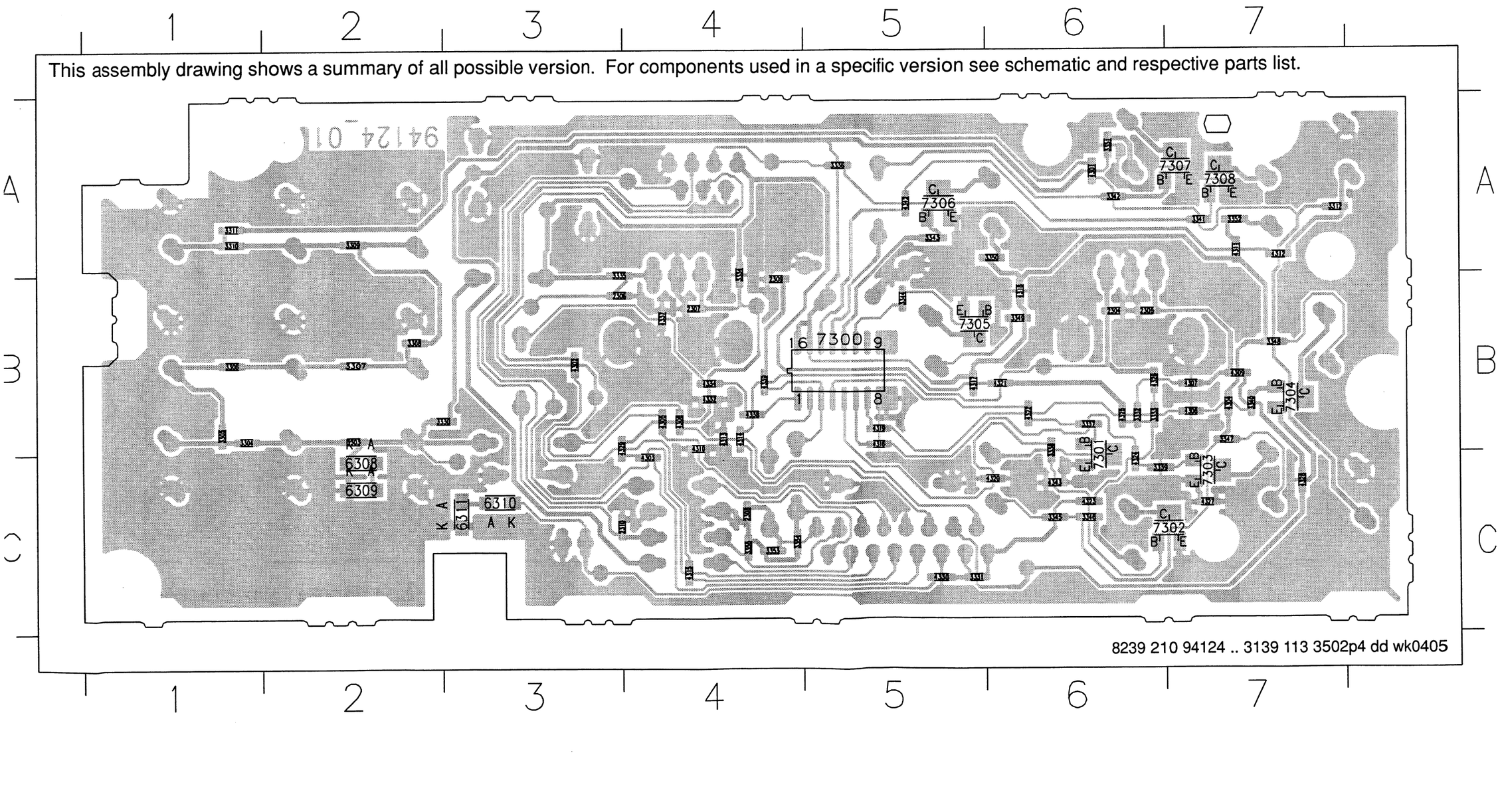
6307	C7	9304	A4	9308	B3	9312	A4				
9301	B3	9305	B3	9309	A3	9313	A4				
9302	C3	9306	A4	9310	B5	9314	A4				
9303	A4	9307	C3	9311	C5	9315	A5				



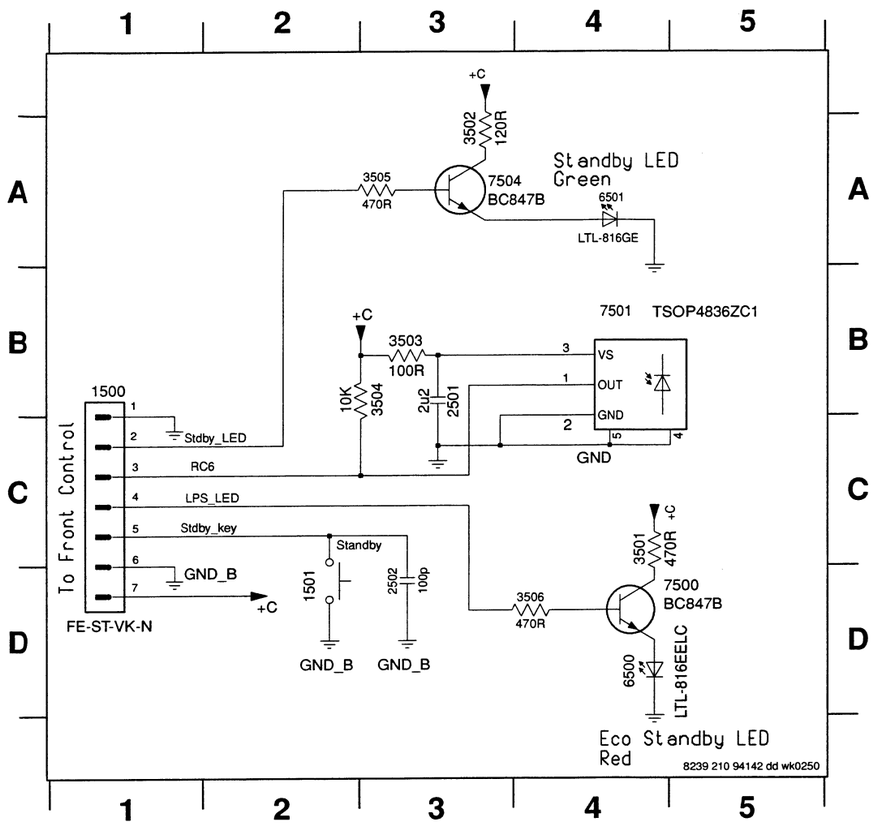
6-5b

FRONT CONTROL PART - CHIPS LAYOUT (For pt 4 board)

2304 B6	3305 B1	3331 C5	3340 B7	3349 B6	4303 C4	4312 A7	4321 B6	4330 C5	6309 C2	7306 A5
2305 B6	3306 B1	3332 B6	3341 A7	3350 A6	4304 B7	4313 B4	4322 B6	4332 B4	6310 C3	7307 A7
2306 B3	3307 B2	3333 B6	3342 A6	3351 A6	4305 B4	4314 B4	4323 C6	4334 B4	6311 C3	7308 A7
2307 B4	3308 B2	3334 A4	3343 A5	3352 A7	4306 B7	4315 C4	4324 C6	4337 B4	7300 B5	
2308 C4	3309 A2	3335 B3	3344 B5	3353 C4	4307 B7	4316 B5	4325 B6	4338 B4	7301 C6	
2309 B4	3310 A1	3336 A5	3345 C6	3354 C4	4308 B4	4317 B5	4326 B6	4339 B4	7302 C7	
2310 C3	3311 A1	3337 B6	3346 C6	3355 C4	4309 B7	4318 B6	4327 C7	4342 A5	7303 C7	
3303 B2	3312 A7	3338 B6	3347 B7	4301 A6	4310 B4	4319 B5	4328 C7	4343 C6	7304 B7	
3304 B1	3330 B3	3339 C6	3348 B7	4302 B3	4311 A7	4320 C6	4329 B3	6308 C2	7305 B5	

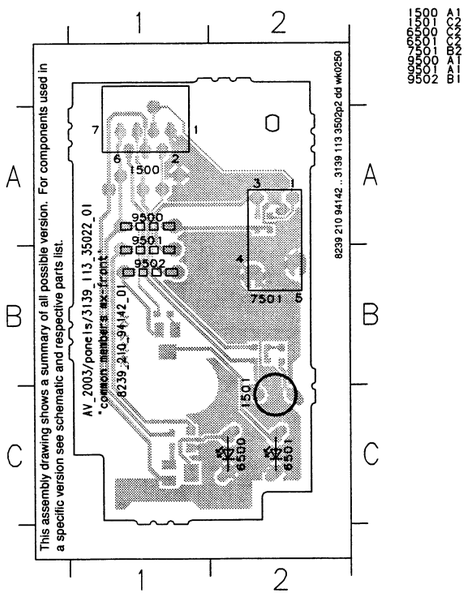


POWER SWITCH PART - CIRCUIT DIAGRAM

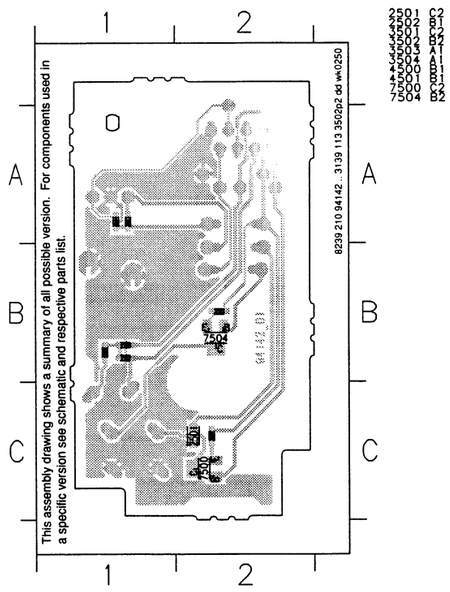


1500 B1
1501 D2
2501 B3
2502 D3
3501 C4
3502 A3
3503 B3
3504 B3
3505 A3
3506 D4
6500 D4
6501 A4
7500 D4
7501 B5
7504 A3
T500 B1
T501 C1
T502 C1
T503 C1
T504 C1
T505 D1

POWER SWITCH PART - COMPONENT & CHIP LAYOUTS


This assembly drawing shows a summary of all possible version. For components used in a specific version see schematic and respective parts list.
AV_2003/panels/3139_113_35022_01
*common_members*mx-front*
8239_210_94142_01
8239 210 94142..3139 113 3502p2 dd wk0250

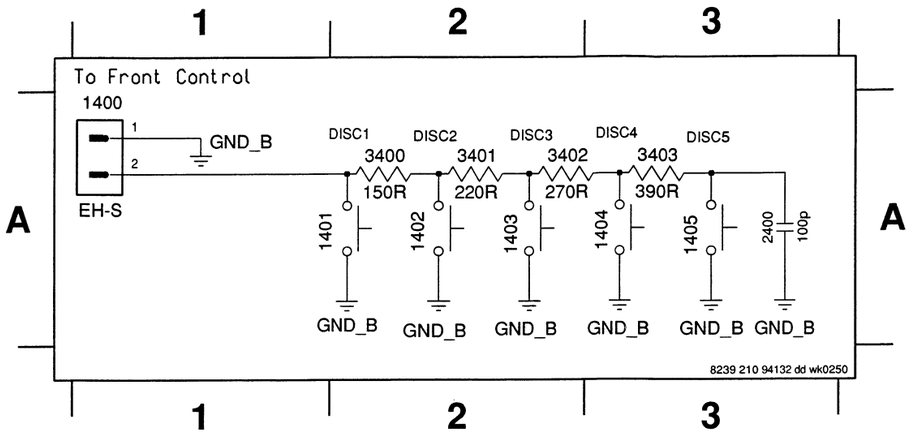
1500 A1
1501 C2
2500 C2
2501 C2
7501 B2
9500 A1
9501 A1
9502 B1


This assembly drawing shows a summary of all possible version. For components used in a specific version see schematic and respective parts list.
8239_210_94142_01
8239 210 94142..3139 113 3502p2 dd wk0250

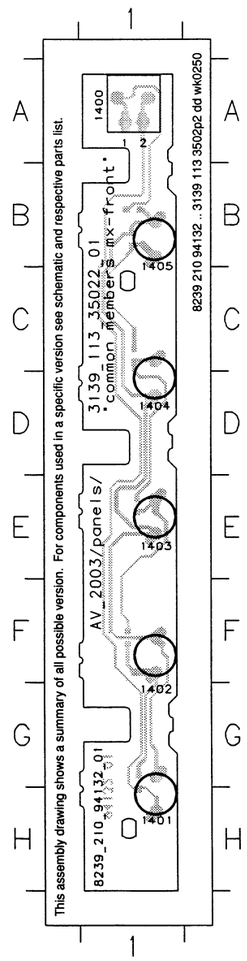
2501 C2
3502 B1
3503 B1
3504 A2
3505 A1
4500 B1
4501 B1
7500 B2
7504 B2

DTC KEY PART - CIRCUIT DIAGRAM

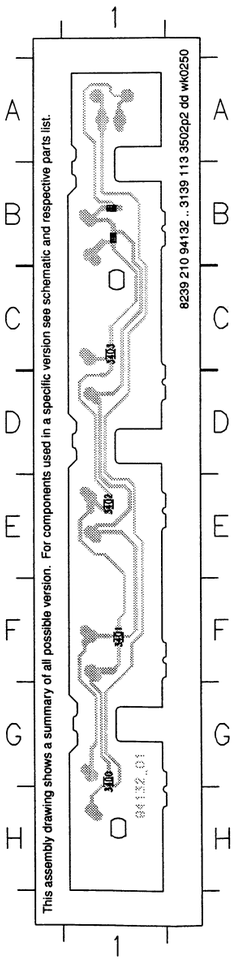
1400 A1 1401 A1 1402 A2 1403 A2 1404 A3 1405 A3 2400 A3 3400 A2 3401 A2 3402 A2 3403 A3



DTC KEY PART - COMPONENT & CHIP LAYOUTS


This assembly drawing shows a summary of all possible version. For components used in a specific version see schematic and respective parts list.
AV_2003/panels/3139_113_35022_01
*common_members*mx-front*
8239_210_94132_01
8239 210 94132..3139 113 3502p2 dd wk0250

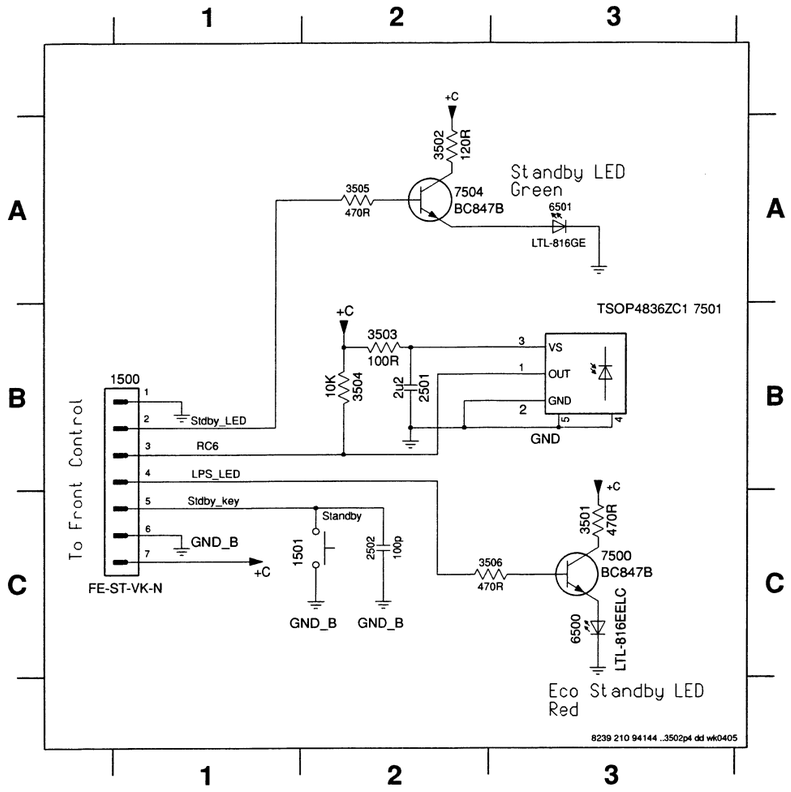
1400 A1
1401 H1
1402 G1
1403 F1
1404 D1
1405 B1


This assembly drawing shows a summary of all possible version. For components used in a specific version see schematic and respective parts list.
8239 210 94132..3139 113 3502p2 dd wk0250

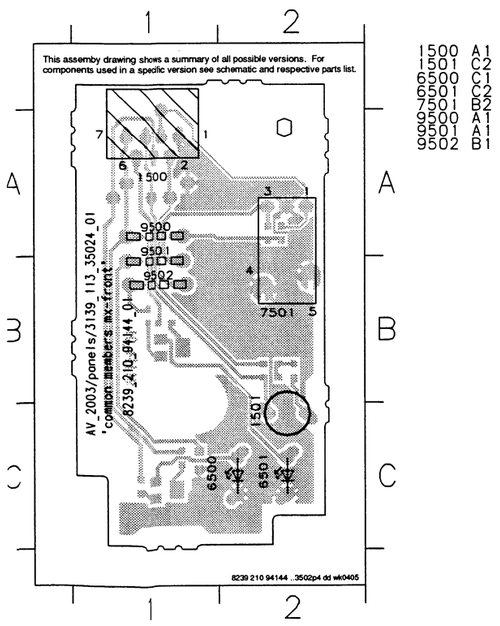
2400 B1
3400 G1
3401 F1
3402 F1
3403 C1
4400 B1

POWER SWITCH PART - CIRCUIT DIAGRAM (For pt 4 board)

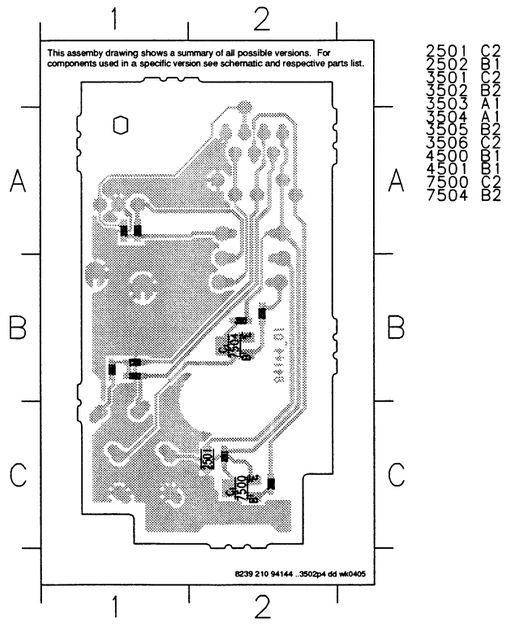
1500 B1 2501 B2 3501 C3 3503 B2 3505 A2 6500 C3 7500 C3 7504 A2
1501 C1 2502 C2 3502 A2 3504 B2 3506 C3 6501 A3 7501 B3



POWER SWITCH PART - COMPONENT & CHIP LAYOUTS (pt 4 board)



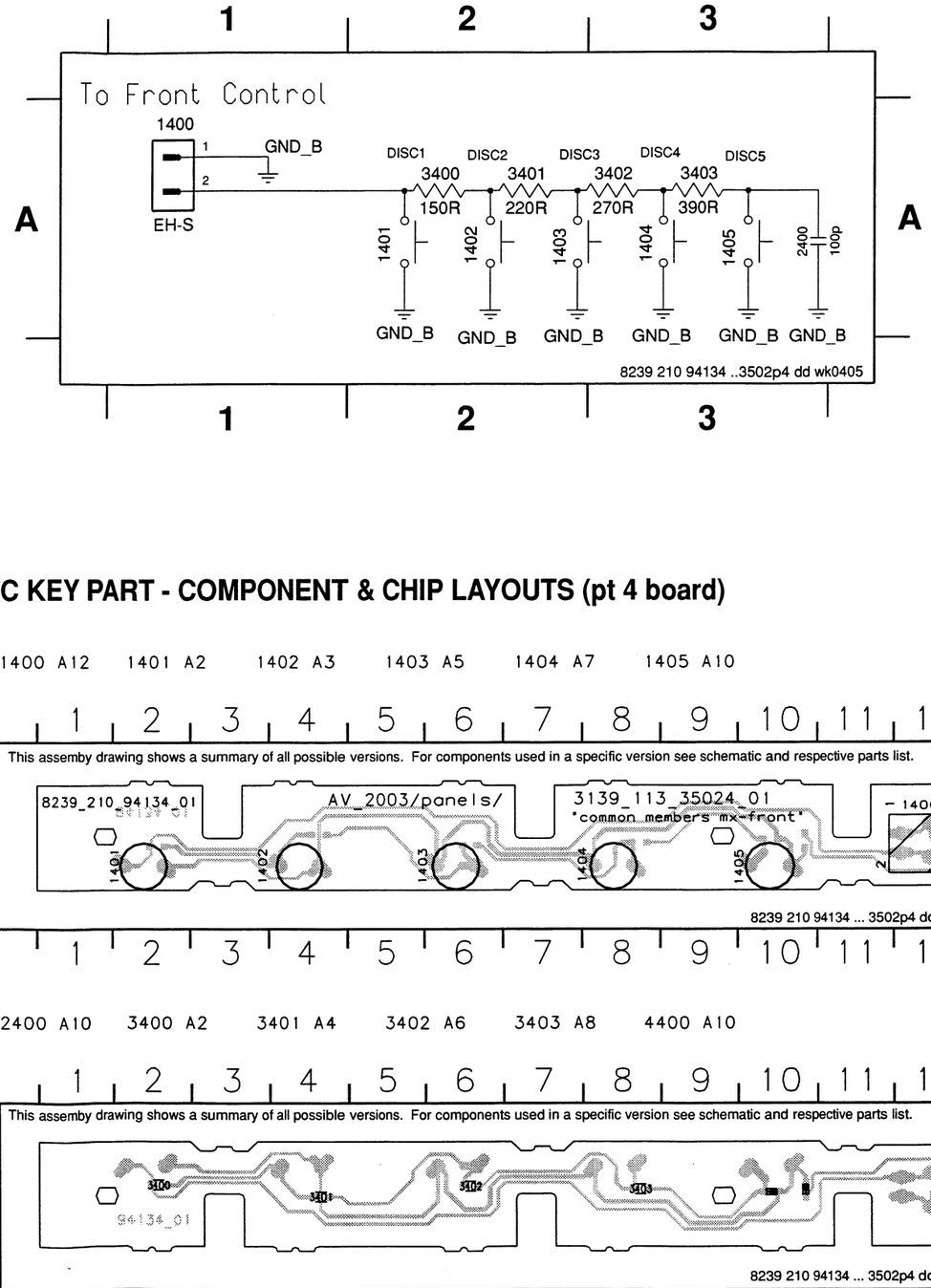
1500 A1
1501 C2
6500 C1
6501 C2
7501 B2
9500 A1
9501 A1
9502 B1


This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic and respective parts list.
8239 210 94144 ..3502p4 dd wk0405

2501 C2
2502 B1
3501 C2
3502 B2
3503 A1
3504 A1
3505 B2
3506 C2
4500 B1
4501 B1
7500 C2
7504 B2

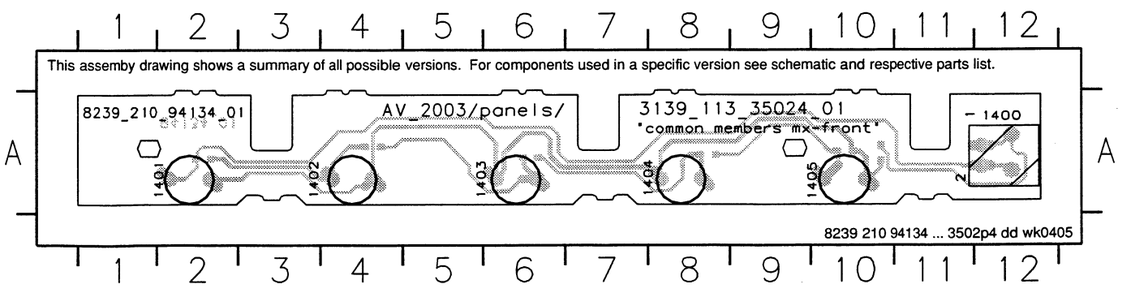
DTC KEY PART - CIRCUIT DIAGRAM (For pt 4 board)

1400 A1 1402 A2 1404 A3 2400 A3 3401 A2 3403 A3
1401 A2 1403 A2 1405 A3 3400 A2 3402 A3

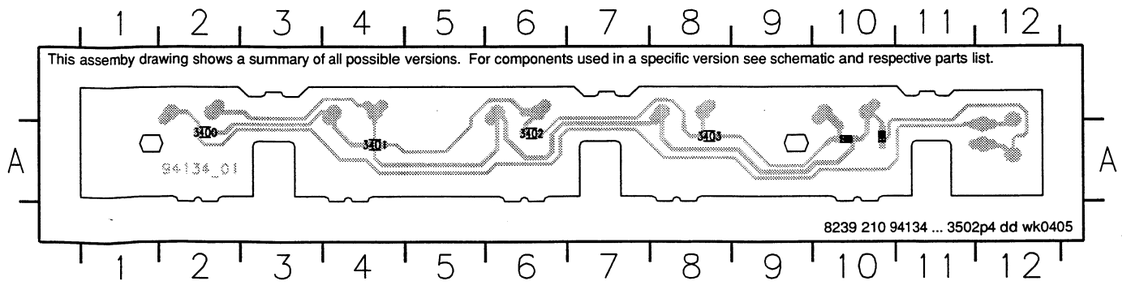


DTC KEY PART - COMPONENT & CHIP LAYOUTS (pt 4 board)

1400 A12 1401 A2 1402 A3 1403 A5 1404 A7 1405 A10

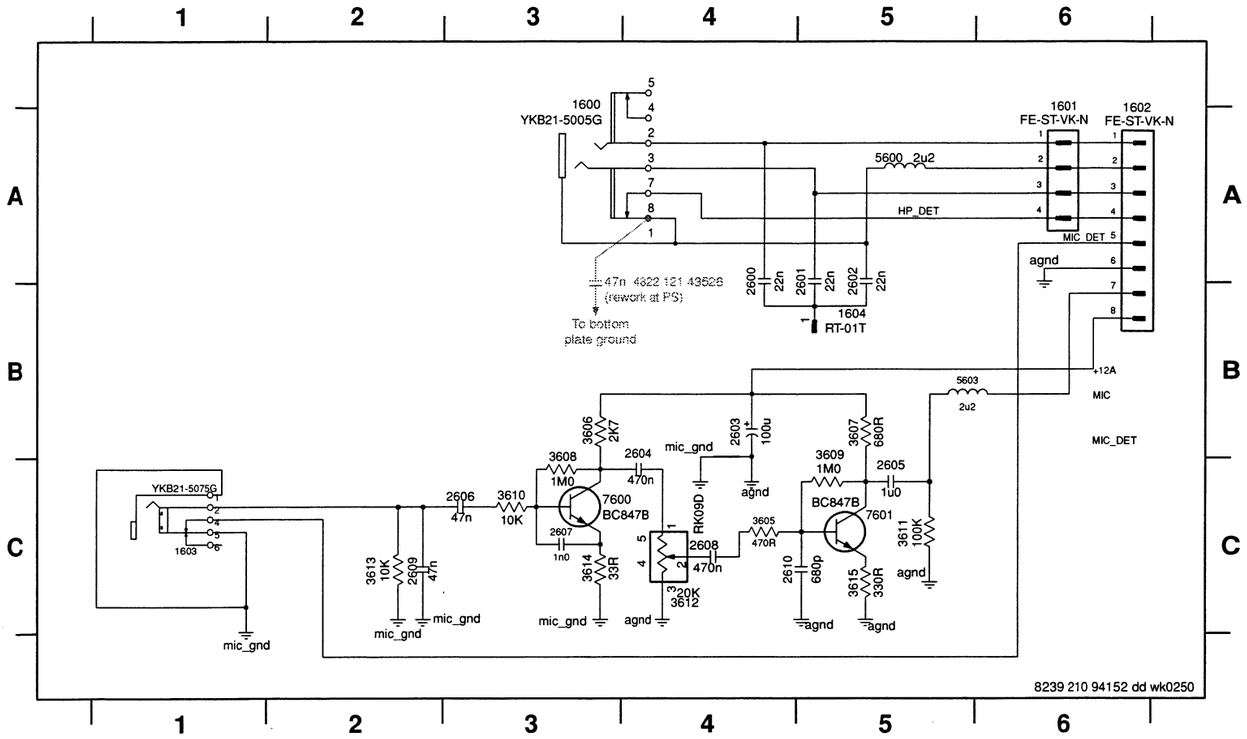


2400 A10 3400 A2 3401 A4 3402 A6 3403 A8 4400 A10


This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic and respective parts list.
3400
3401
3402
3403
8239 210 94134 ... 3502p4 dd wk0405

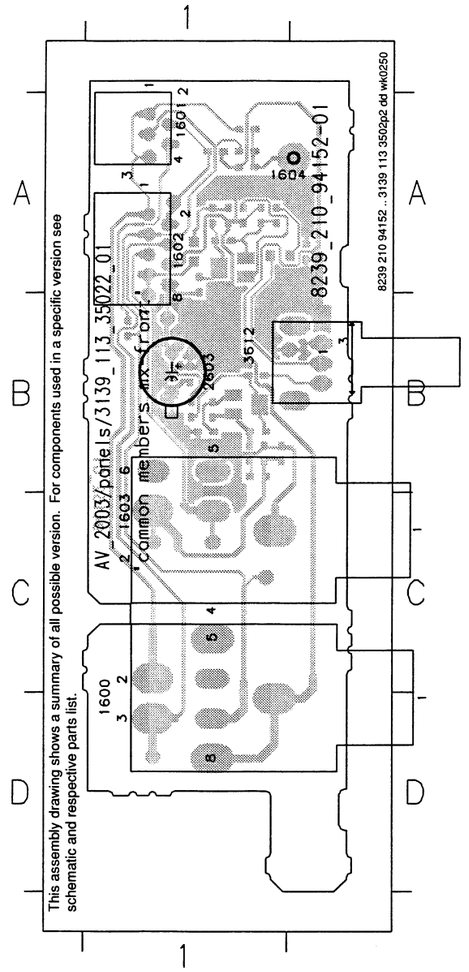
HDPH & MIC PART - CIRCUIT DIAGRAM

1600 A3 1602 A6 1604 B5 2601 A5 2603 B4 2605 C5 2607 C3 2609 C2 3605 C4 3607 B5 3609 C5 3611 C5 3613 C2 3615 C5 5603 B5 7601 C5
1601 A6 1603 C1 2600 A4 2602 A5 2604 B4 2606 C3 2608 C4 2610 C4 3606 B3 3608 C3 3610 C3 3612 C4 3614 C3 5600 A5 7600 C3

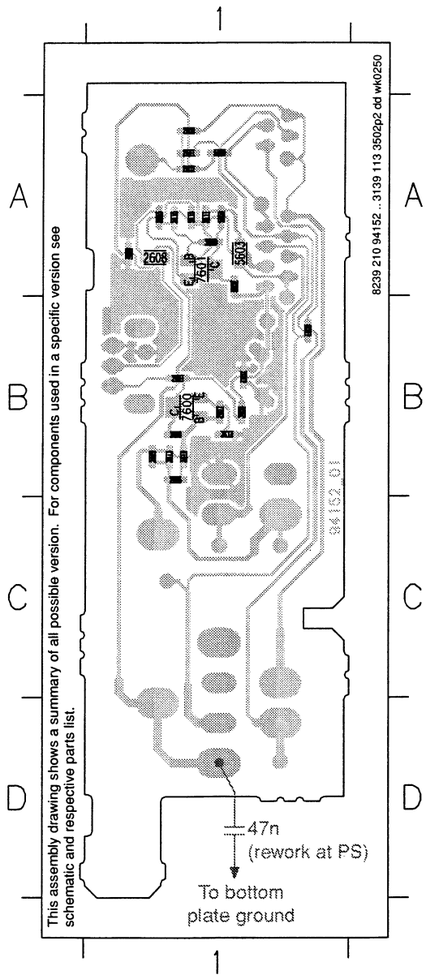


HDPH & MIC PART - COMPONENT & CHIP LAYOUTS

1600 D1 1602 A1 1604 A1 3612 B1
1601 A1 1603 C1 2603 B1



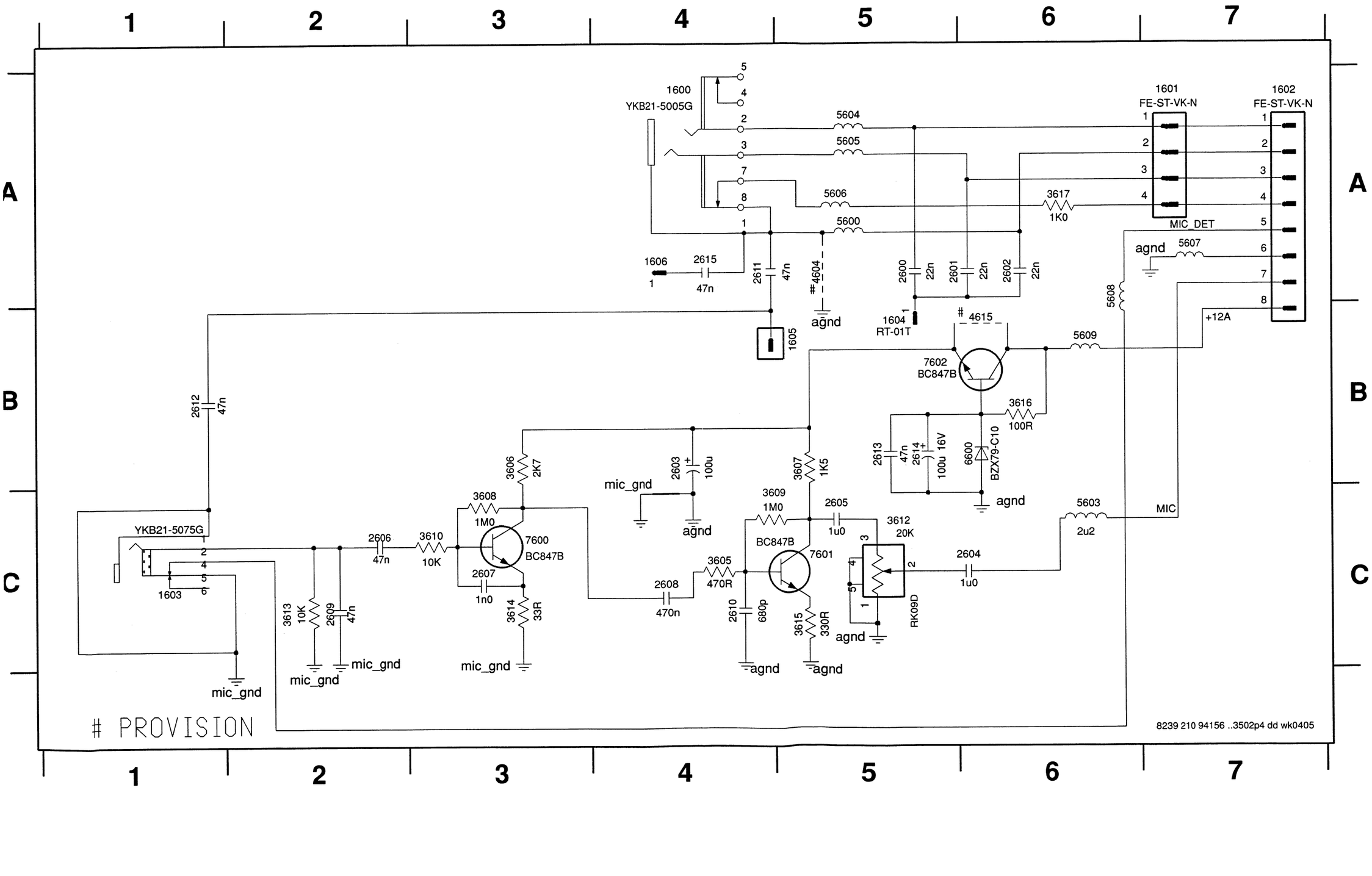
2600 A1 2607 B1 3607 A1 3614 B1 5603 A1
2601 A1 2608 A1 3608 B1 3615 A1 7600 B1
2602 A1 2609 B1 3609 A1 4600 B1 7601 A1
2604 B1 3610 A1 3610 B1 4601 B1
2605 A1 3605 A1 3611 A1 4602 A1
2606 B1 3606 B1 3613 B1 5600 A1


2606
7601
5603
7600
8239 210 94152 .. 3139 113 3502p2 dd wk0250
This assembly drawing shows a summary of all possible version. For components used in a specific version see schematic and respective parts list.
47n
(rework at PS)
To bottom
plate ground

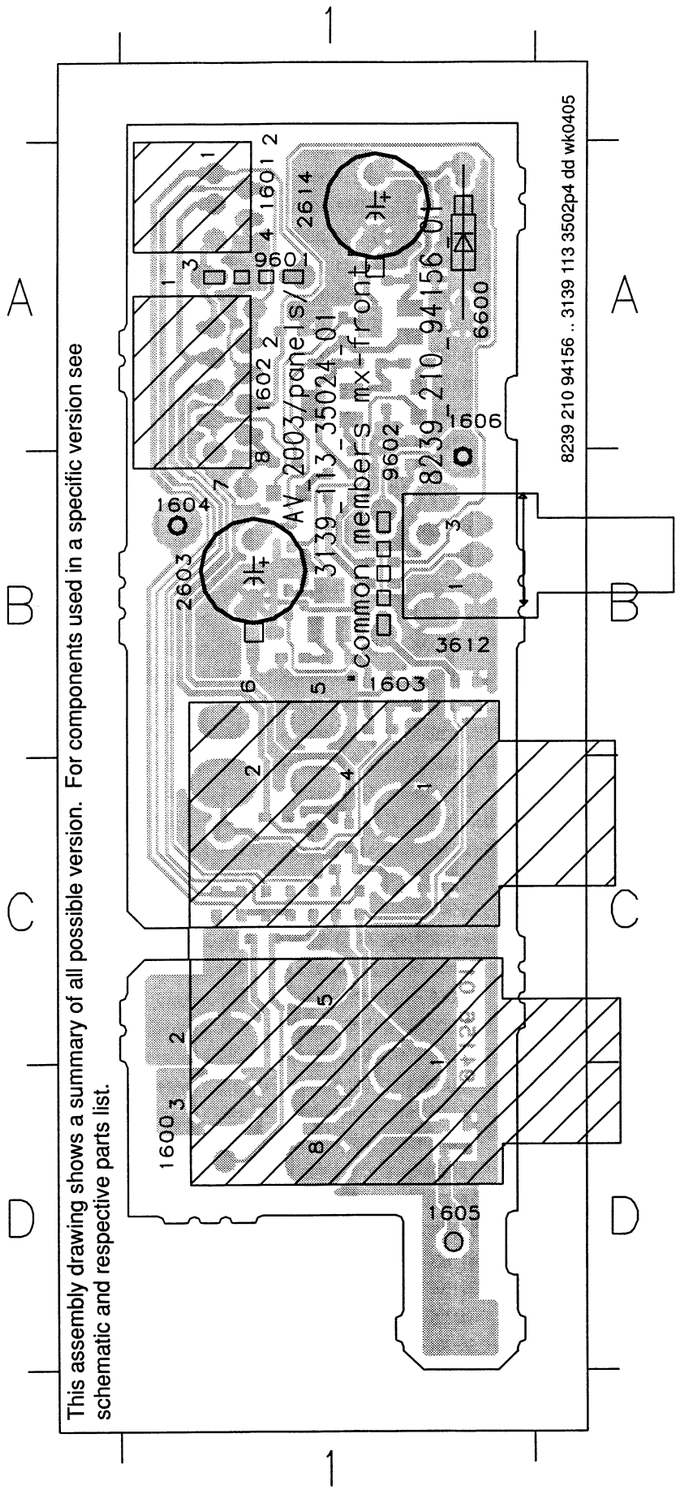
6-7a

HDPH & MIC PART - CIRCUIT DIAGRAM (For pt 4 board)

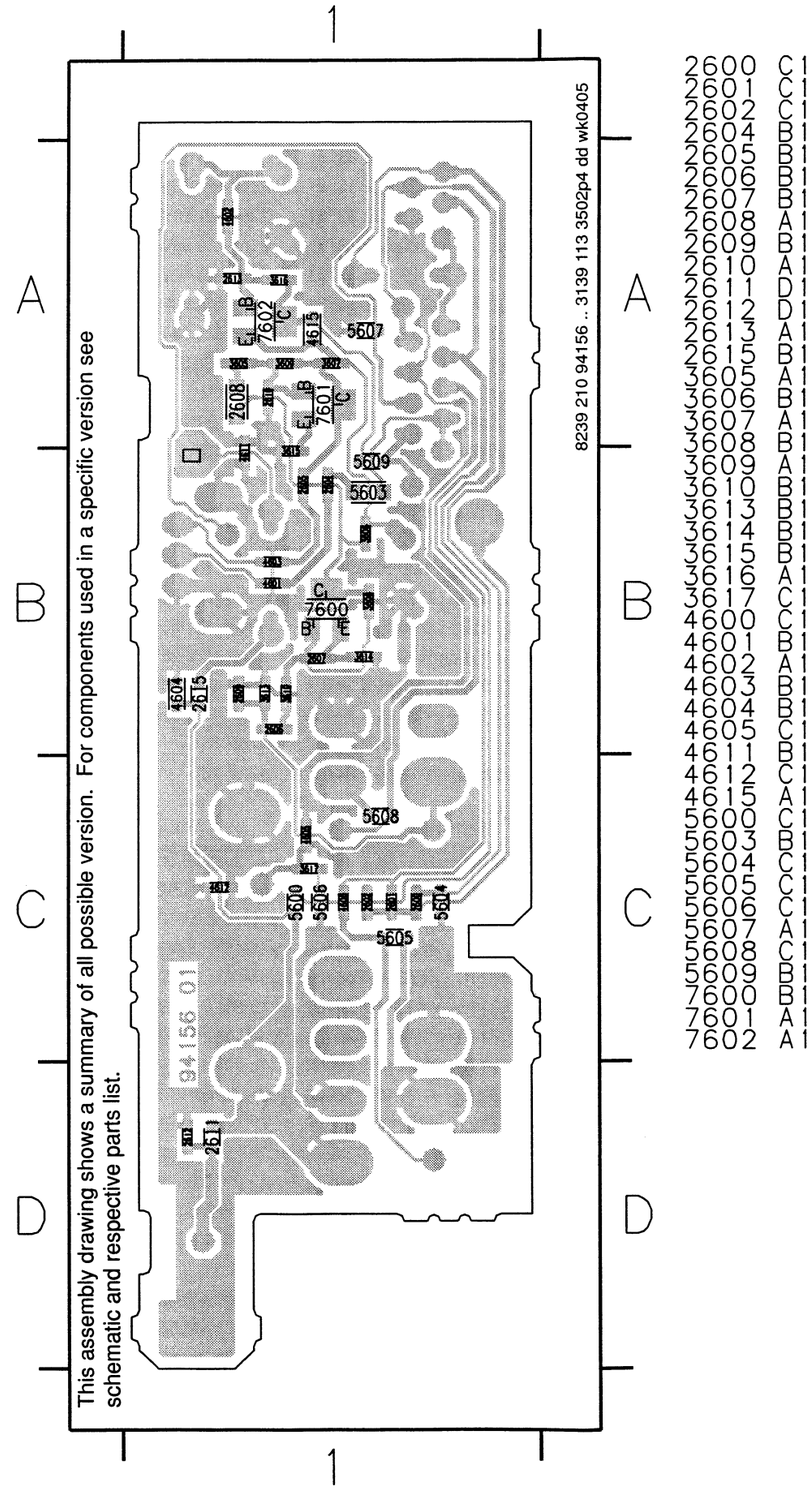
1600 A4	1603 C1	1606 A4	2602 A6	2605 C5	2608 C4	2611 A4	2614 B5	3606 B3	3609 C4	3613 C2	3616 B6	4615 B6	5604 A5	5607 A7	6600 B6	7602 B5
1601 A7	1604 B5	2600 A5	2603 B4	2606 C2	2609 C2	2612 B1	2615 A4	3607 B5	3610 C3	3614 C3	3617 A6	5600 A5	5605 A5	5608 A6	7600 C3	
1602 A7	1605 B5	2601 A5	2604 C6	2607 C3	2610 C4	2613 B5	3605 C4	3608 C3	3612 C5	3615 C5	4604 A5	5603 C6	5606 A5	5609 B6	7601 C5	



HDPH & MIC PART - COMPONENT & CHIP LAYOUTS (pt 4 board)



6-7b



6-8

ELECTRICAL PARTS LIST - FRONT BOARDS

ELECTRICAL PARTS LIST - FRONT BOARDS

MISCELLANEOUS

100	3139 110 53311	FTD Display HNA-13LM05T
101	4822 267 10756	FFC Socket 13P Hort.
104	2422 025 16979	FFC Socket 4P Hort.
105	2422 025 14547	FFC Socket 17P Hort.
106	4822 267 10756	FFC Socket 13P Hort.
300	4822 267 10756	FFC Socket 13P Hort.
301	4822 276 13775	Tact Switch
302	4822 276 13775	Tact Switch
303	4822 276 13775	Tact Switch
304	4822 276 13775	Tact Switch
305	4822 276 13775	Tact Switch
306	4822 276 13775	Tact Switch
307	4822 276 13775	Tact Switch
308	4822 276 13775	Tact Switch
309	4822 276 13775	Tact Switch
310	4822 276 13775	Tact Switch
311	4822 276 13775	Tact Switch
313	4822 267 10956	FFC Socket 7P Hort.
314	2422 129 16975	Rotary Encoder Volume
315	2422 129 16974	Rotary Encoder Source
1401	4822 276 13775	Tact Switch
1402	4822 276 13775	Tact Switch
1403	4822 276 13775	Tact Switch
1404	4822 276 13775	Tact Switch
1405	4822 276 13775	Tact Switch
1500	4822 267 10956	FFC Socket 7P Hort.
1501	4822 276 13775	Tact Switch
1600	2422 026 05192	Headphone Socket D6,3
1601	4822 265 11183	FFC Socket 4P Hort.

CAPACITORS

2101	4822 126 13879	220nF +80/-20% 50V
2108	4822 122 33761	22pF 5% 50V
2109	4822 122 33761	22pF 5% 50V
2110	4822 126 14223	2,2pF +/-0,25pF 50V
2111	3198 017 41050	1uF 10V
2112	4822 122 33761	22pF 5% 50V
2113	2222 867 15339	33pF 5% 50V
2114	5322 126 11583	10nF 10% 50V
2115	2238 586 59812	100nF 10% 50V
2116	2238 586 59812	100nF 10% 50V
2117	3198 017 44740	470nF 10V
2118	5322 126 11583	10nF 10% 50V
2119	2238 586 59812	100nF 10% 50V
2120	2238 586 59812	100nF 10% 50V
2121	2020 552 94427	100pF 5% 50V
2122	2020 552 94427	100pF 5% 50V
2123	2020 552 94427	100pF 5% 50V
2124	2020 552 94427	100pF 5% 50V
2125	2020 552 94427	100pF 5% 50V
2126	4822 124 22726	4,7uF 20% 35V
2127	4822 124 22726	4,7uF 20% 35V
2129	4822 124 22726	4,7uF 20% 35V
2130	2238 586 59812	100nF 10% 50V
2131	4822 124 40433	47uF 20% 25V
2132	4822 124 40433	47uF 20% 25V
2133	4822 122 33761	22pF 5% 50V
2134	4822 122 33761	22pF 5% 50V
2135	4822 122 33761	22pF 5% 50V
2136	4822 122 33761	22pF 5% 50V
2137	4822 122 33761	22pF 5% 50V
2138	4822 122 33761	22pF 5% 50V
2139	4822 122 33761	22pF 5% 50V
2140	4822 122 33761	22pF 5% 50V
2141	3198 017 41050	1uF 10V
2142	4822 124 22726	4,7uF 20% 35V
2304	5322 126 11583	10nF 10% 50V
2305	5322 126 11583	10nF 10% 50V
2306	5322 126 11583	10nF 10% 50V
2307	5322 126 11583	10nF 10% 50V
2400	2020 552 94427	100pF 5% 50V
2501	4822 126 14491	2,2uF 10V 0805
2502	2020 552 94427	100pF 5% 50V
2600	4822 126 14494	22nF 10% 25V
2601	4822 126 14494	22nF 10% 25V
2602	4822 126 14494	22nF 10% 25V
2611	3198 017 34730	47nF 16V
2615	3198 017 34730	47nF 16V

RESISTORS

3105	4822 051 30474	470k 5% 0,062W
3110	4822 051 30103	10k 5% 0,062W
3112	4822 051 30103	10k 5% 0,062W
3115	4822 051 30103	10k 5% 0,062W
3116	4822 051 30103	10k 5% 0,062W
3117	4822 051 30102	1k 5% 0,062W
3118	4822 051 30472	4k7 5% 0,062W
3119	4822 051 30102	1k 5% 0,062W
3120	4822 051 30008	0R Jumper 0603
3121	4822 051 30008	0R Jumper 0603
3122	4822 051 30272	2k7 5% 0,062W
3125	4822 051 30102	1k 5% 0,062W
3126	4822 052 10479 ⚠	47R 5% 0,33W
3127	4822 052 10479 ⚠	47R 5% 0,33W
3130	4822 051 30684	680k 5% 0,062W
3132	4822 051 30684	680k 5% 0,062W
3133	4822 051 30223	22k 5% 0,062W
3158	4822 051 30103	10k 5% 0,062W
3159	4822 051 30103	10k 5% 0,062W
3160	4822 051 30103	10k 5% 0,062W
3161	4822 051 30102	1k 5% 0,062W
3162	4822 051 30102	1k 5% 0,062W
3163	4822 051 30102	1k 5% 0,062W
3164	4822 051 30223	22k 5% 0,062W
3165	4822 117 13632	100k 1% 0,062W
3166	4822 117 12864	82k 5% 0,062W
3167	4822 117 12864	82k 5% 0,062W
3168	4822 117 12864	82k 5% 0,062W
3169	4822 117 12864	82k 5% 0,062W
3170	4822 051 30103	10k 5% 0,062W
3171	4822 051 30103	10k 5% 0,062W
3172	4822 051 30103	10k 5% 0,062W
3173	4822 051 30103	10k 5% 0,062W
3174	4822 051 30103	10k 5% 0,062W
3175	4822 051 30103	10k 5% 0,062W
3176	4822 051 30103	10k 5% 0,062W
3177	4822 051 30105	1M 5% 0,062W
3201	4822 051 30103	10k 5% 0,062W
3303	4822 051 30151	150R 5% 0,062W
3304	4822 051 30221	220R 5% 0,062W
3305	4822 051 30271	270R 5% 0,062W
3306	4822 051 30391	390R 5% 0,062W
3307	4822 051 30561	560R 5% 0,062W
3308	4822 117 12968	820R 5% 0,62W
3309	4822 117 11817	1k2 1% 1/16W
3310	4822 117 12903	1k8 1% 0,063W
3311	4822 051 30272	2k7 5% 0,062W
3312	4822 051 30472	4k7 5% 0,062W
3330	4822 051 30272	2k7 5% 0,062W
3331	4822 051 30272	2k7 5% 0,062W
3332	4822 051 30103	10k 5% 0,062W
3333	4822 051 30103	10k 5% 0,062W
3334	4822 051 30103	10k 5% 0,062W
3335	4822 051 30103	10k 5% 0,062W
3336	4822 051 30103	10k 5% 0,062W
3400	4822 051 30151	150R 5% 0,062W
3401	4822 051 30221	220R 5% 0,062W
3402	4822 051 30271	270R 5% 0,062W
3403	4822 051 30391	390R 5% 0,062W
3501	4822 051 30471	470R 5% 0,062W
3502	4822 051 30121	120R 5% 0,062W
3503	4822 051 30101	100R 5% 0,062W
3504	4822 051 30103	10k 5% 0,062W
3505	4822 051 30471	470R 5% 0,062W
3506	4822 051 30471	470R 5% 0,062W
3617	4822 051 30102	1k 5% 0,062W
4100	4822 051 30008	0R Jumper 0603
4102	4822 051 30008	0R Jumper 0603
4103	4822 051 30008	0R Jumper 0603
4104	4822 051 30008	0R Jumper 0603
4105	4822 051 30008	0R Jumper 0603
4106	4822 051 30008	0R Jumper 0603
4107	4822 051 30008	0R Jumper 0603
4108	4822 051 30008	0R Jumper 0603
4109	4822 051 30008	0R Jumper 0603
4110	4822 051 30008	0R Jumper 0603
4111	4822 051 30008	0R Jumper 0603
4112	4822 051 30008	0R Jumper 0603
4113	4822 051 30008	0R Jumper 0603
4114	4822 051 30008	0R Jumper 0603
4115	4822 051 30008	0R Jumper 0603
4116	4822 051 30008	0R Jumper 0603
4117	4822 051 30008	0R Jumper 0603
4118	4822 051 30008	0R Jumper 0603
4119	4822 051 30008	0R Jumper 0603
4120	4822 051 30008	0R Jumper 0603
4121	4822 051 30008	0R Jumper 0603
4122	4822 051 30008	0R Jumper 0603
4123	4822 051 30008	0R Jumper 0603
4124	4822 051 30008	0R Jumper 0603
4125	4822 051 30008	0R Jumper 0603
4126	4822 051 30008	0R Jumper 0603
4127	4822 051 30008	0R Jumper 0603
4128	4822 051 30008	0R Jumper 0603
4129	4822 051 30008	0R Jumper 0603
4130	4822 051 30008	0R Jumper 0603
4131	4822 051 30008	0R Jumper 0603
4132	4822 051 30008	0R Jumper 0603
4133	4822 051 30008	0R Jumper 0603
4134	4822 051 30008	0R Jumper 0603
4135	4822 051 30008	0R Jumper 0603
4136	4822 051 30008	0R Jumper 0603
4137	4822 051 30008	0R Jumper 0603
4138	4822 051 30008	0R Jumper 0603
4139	4822 051 30008	0R Jumper 0603
4140	4822 051 30008	0R Jumper 0603
4141	4822 051 30008	0R Jumper 0603
4142	4822 051 30008	0R Jumper 0603
4143	4822 051 30008	0R Jumper 0603
4144	4822 051 30008	0R Jumper 0603
4145	4822 051 30008	0R Jumper 0603
4146	4822 051 30008	0R Jumper 0603
4147	4822 051 30008	0R Jumper 0603
4148	4822 051 30008	0R Jumper 0603
4149	4822 051 30008	0R Jumper 0603
4150	4822 051 30008	0R Jumper 0603
4151	4822 051 30008	0R Jumper 0603
4152	4822 051 30008	0R Jumper 0603
4153	4822 051 30008	0R Jumper 0603
4154	4822 051 30008	0R Jumper 0603
4155	4822 051 30008	0R Jumper 0603
4156	4822 051 30008	0R Jumper 0603
4157	4822 051 30008	0R Jumper 0603
4158	4822 051 30008	0R Jumper 0603
4159	4822 051 30008	0R Jumper 0603
4160	4822 051 30008	0R Jumper 0603
4162	4822 051 30008	0R Jumper 0603
4165	4822 051 30008	0R Jumper 0603

ELECTRICAL PARTS LIST - FRONT BOARDS

RESISTORS

4301	4822 051 30008	0R Jumper 0603
4302	4822 051 30008	0R Jumper 0603
4303	4822 051 30008	0R Jumper 0603
4304	4822 051 30008	0R Jumper 0603
4305	4822 051 30008	0R Jumper 0603
4306	4822 051 30008	0R Jumper 0603
4307	4822 051 30008	0R Jumper 0603
4308	4822 051 30008	0R Jumper 0603
4309	4822 051 30008	0R Jumper 0603
4310	4822 051 30008	0R Jumper 0603
4311	4822 051 30008	0R Jumper 0603
4312	4822 051 30008	0R Jumper 0603
4313	4822 051 30008	0R Jumper 0603
4314	4822 051 30008	0R Jumper 0603
4315	4822 051 30008	0R Jumper 0603
4316	4822 051 30008	0R Jumper 0603
4317	4822 051 30008	0R Jumper 0603
4318	4822 051 30008	0R Jumper 0603
4319	4822 051 30008	0R Jumper 0603
4320	4822 051 30008	0R Jumper 0603
4321	4822 051 30008	0R Jumper 0603
4323	4822 051 30008	0R Jumper 0603
4324	4822 051 30008	0R Jumper 0603
4325	4822 051 30008	0R Jumper 0603
4326	4822 051 30008	0R Jumper 0603
4327	4822 051 30008	0R Jumper 0603
4328	4822 051 30008	0R Jumper 0603
4329	4822 051 30008	0R Jumper 0603
4330	4822 051 30008	0R Jumper 0603
4332	4822 051 30008	0R Jumper 0603
4334	4822 051 30008	0R Jumper 0603
4337	4822 051 30008	0R Jumper 0603
4338	4822 051 30008	0R Jumper 0603
4339	4822 051 30008	0R Jumper 0603
4342	4822 051 30008	0R Jumper 0603
4343	4822 051 30008	0R Jumper 0603
4400	4822 051 30008	0R Jumper 0603
4500	4822 051 30008	0R Jumper 0603
4501	4822 051 30008	0R Jumper 0603
4600	4822 051 30008	0R Jumper 0603
4601	4822 051 30008	0R Jumper 0603
4602	4822 051 30008	0R Jumper 0603
4605	4822 051 30008	0R Jumper 0603

COILS & FILTERS

5100	3198 018 52280	Coil 2,2uH 10% 0603
5102	5322 242 73686	Ceram Resonator 12MHz
5103	4822 242 70938	X'tal Resonator 32,768kHZ
5104	3198 018 52280	Coil 2,2uH 10% 0603
5600	2422 549 44608	Ind Fxd 100MHz 1k
5604	2422 549 44608	Ind Fxd 100MHz 1k
5605	2422 549 44608	Ind Fxd 100MHz 1k
5606	2422 549 44608	Ind Fxd 100MHz 1k

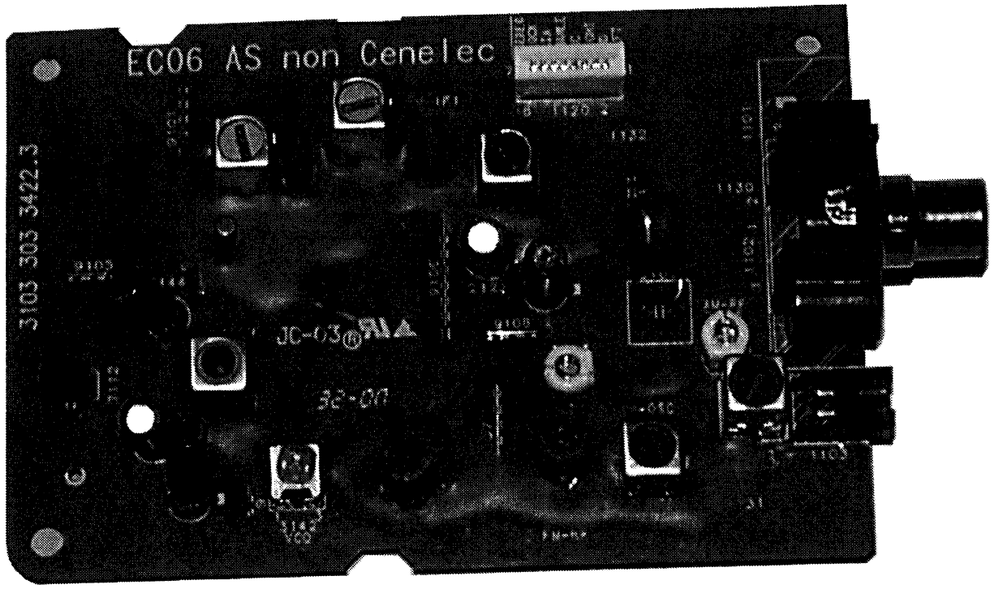
DIODES

6100	4822 130 30621	1N4148
6101	4822 130 30621	1N4148
6103	4822 130 30621	1N4148
6106	4822 130 31878	1N4003G
6105	4822 130 80622	BAT54
6107	4822 130 83206	BZX79-B5V6
6108	4822 130 11397	BAS316
6113	4822 130 31878	1N4003G
6118	4822 130 80622	BAT54
6119	4822 130 31878	1N4003G
6308	4822 130 11416	BZX384-C6V8
6309	4822 130 11416	BZX384-C6V8
6310	4822 130 11416	BZX384-C6V8
6311	4822 130 11416	BZX384-C6V8
6500	9322 179 76676	LTL-816EELC
6501	9322 183 96676	LTL-816GE

TRANSISTORS & INTEGRATED CIRCUITS

7100	3139 110 53491	TMP88CU74F with "3900S53491"
7103	9322 145 26668	M24C02-WMN6
7104	5322 130 60159	BC847B
7105	5322 130 60159	BC847B
7106	5322 130 60159	BC847B
7107	5322 130 60159	BC847B
7108	5322 130 60159	BC847B
7109	5322 130 60159	BC847B
7500	5322 130 60159	BC847B
7501	9322 185 97667	IR RECEIVER TSOP4836ZC1
7504	5322 130 60159	BC847B

Note: Only the parts mentioned in this list are normal service spare parts.



ECO6 Tuner Board

version: ***SYSTEMS non-CENELEC***

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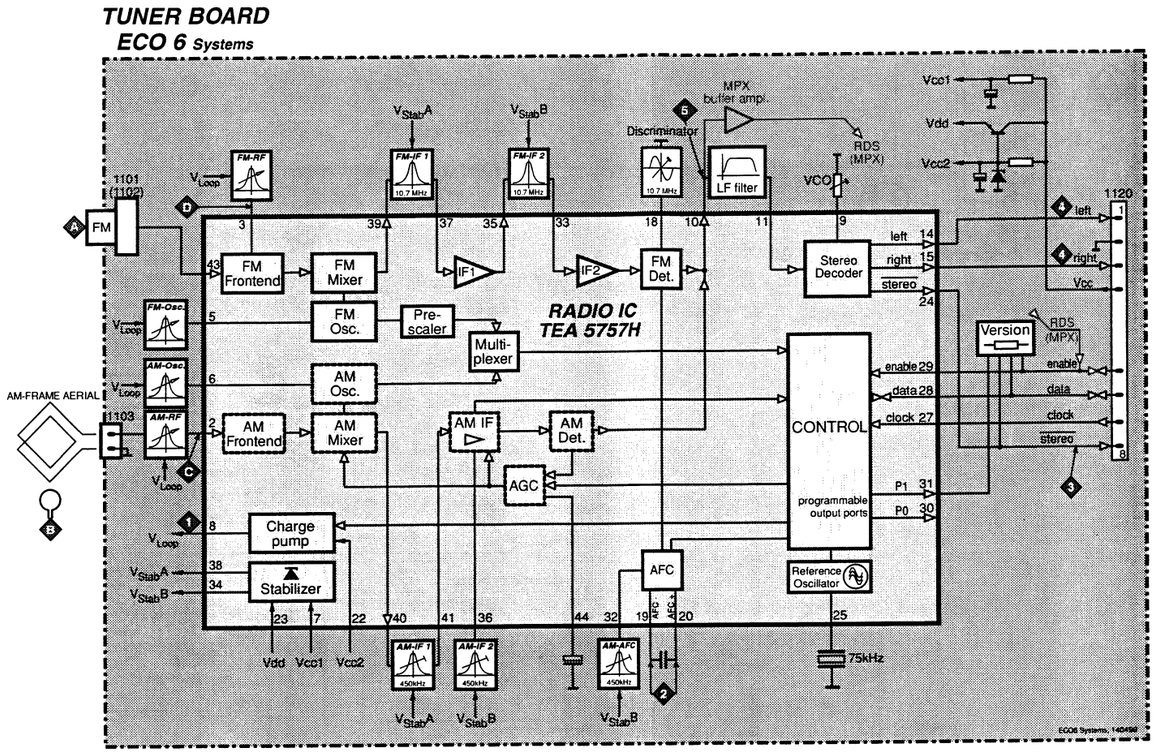
7A-1

BLOCK DIAGRAM



7A-2

TUNER BOARD ECO6 / SYSTEMS NON CENELEC

VERSION PROGRAMMING COMPONENTS

VERSION	6120	3156	3157	3170	7111
/00 /02 FM/MW/LW	X				
/00 /02 FM/MW		X	X	X	X
/01 FM/MW		X	X	X	X
/14 FM-OIRT/MW	X				X
/17 FM/AM	X				X
/06 FM-Japan/AM	X				X

X component mounted

LEGEND

- Ⓓ...for provision only
- **USA ...** for USA version only
- **E-EU ...** for East European version only
- **J ...** for Japanese version only

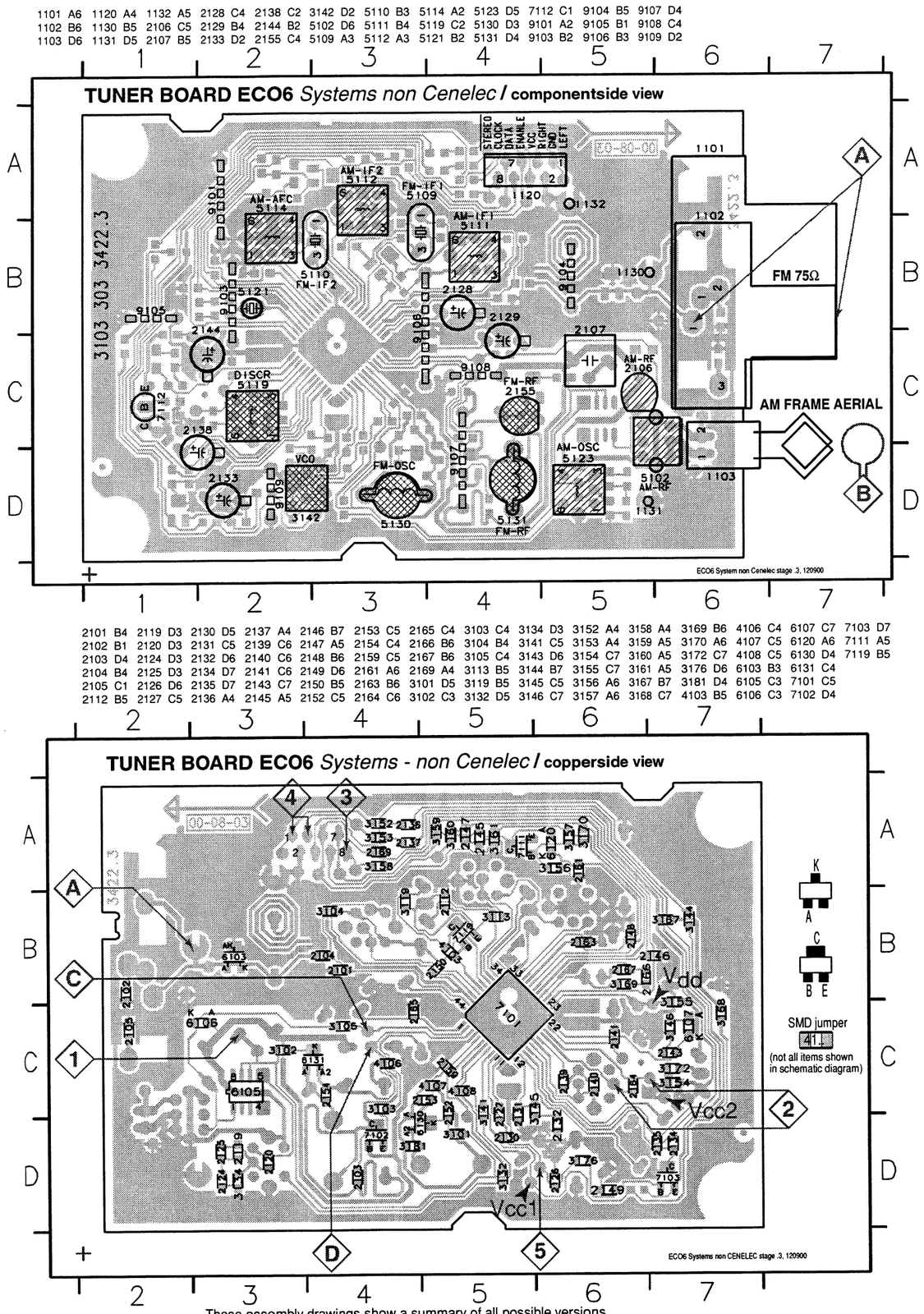
...V FM mode stereo
...V MW mode
EVM ...V LW mode
voltages measured while set is tuned to a strong transmitter

Signal path

- FM
- AM
- MPX (Audio Frequency)
- AF - left/right

ECO6 Sys-non Cenelec, 000911

1101 A1
1102 B1
1103 F2
1120 E14
1130 A2
1131 B2
1132 G13
2101 B3
2102 B1
2103 C7
2104 B3
2105 A2
2106 F3
2107 F4
2119 H6
2120 G6
2124 H6
2125 H6
2126 F7
2127 E7
2128 C8
2129 C7
2130 F11
2131 G8
2132 G8
2133 G8
2134 H8
2135 H9
2136 G14
2137 G13
2138 F9
2139 G9
2140 G9
2141 F10
2143 G12
2144 G11
2145 F12
2146 E12
2147 E12
2148 E12
2149 H7
2150 A10
2152 E4
2153 E5
2154 D5
2155 D5
2159 F6
2161 C11
2163 D11
2164 F10
2165 C7
2166 E11
2167 E11
2169 H6
3101 E4
3102 D4
3103 C6
3104 A7
3105 B6
3132 G5
3134 H6
3141 E7
3142 E7
3143 G7
3144 H7
3145 F8
3146 G13
3152 G14
3153 G13
3154 G13
3155 G11
3156 C12
3157 C12
3158 E13
3159 D13
3160 D12
3161 D13
3167 F12
3168 F11
3169 E11
3170 C12
3172 G12
3176 G7
3181 E6
5102 F2
5109 B9
5110 B10
5111 A8
5112 A11
5114 B11
5119 G9
5121 E11
5123 G5
5130 E5
5131 C6
6103 B2
6105-1 F3
6105-2 G5
6106 C3
6107 G13
6120 C13
6130 E5
6131 D5
7101 C8
7102 C6
7103 H7
7111 C13
7112 G12
T102 B2
T103 B2
T105 F2
T106 F2
T109 B6
T110 F5
T111 F4
T112 F7
T113 A8
T114 B10
T115 A8
T116 F10
T117 G13
T118 G11
T120 F13
T121 F13
T122 F13
T123 E13
T124 G14
T125 F14
T126 F13
T127 F13
T128 D7
T140 F11
T141 F10
T142 F10



These assembly drawings show a summary of all possible versions.
For components used in a specific version see schematic diagram respectively partslist.

TUNER ADJUSTMENT TABLE (ECO6 FM/MW- and FM/MW/LW - versions with AM-frame aerial)

Waverange	Input frequency	Input	Tuned to	Adjust	Output	Scope/Voltmeter
VARICAP ALIGNMENT						
FM 87.5 - 108MHz (65.81 - 74, 87.5 - 108MHz)			108MHz	5130	◇1	8V ±0.2V
			87.5MHz (65.81MHz)	check		4.3V ±0.5V (1.2V ±0.5V)
MW FM/AM-version, 10kHz grid 530 - 1700kHz			1700kHz	5123		8V ±0.2V
			530kHz	check		1.1V ±0.4V
FM/MW-version, 9kHz grid 531 - 1602kHz			1602kHz	5123		6.9V ±0.2V
			531kHz	check		1.1V ±0.4V
LW 153 - 279kHz			279kHz	5122		8V ±0.2V
			153kHz	check		1.1V ±0.4V
MW FM/MW/LW- version, 9kHz grid 531 - 1602kHz			1602kHz	5123		8V ±0.2V
			531kHz	check		1.1V ±0.4V
FM IF						
FM	10.7MHz, 45mV continuous wave	◇D	IC 7101 21 shortcircuit to block AFC 2141	5119	◇2	0 ± 3 mV DC
FM RF						
FM 87.5 - 108MHz (65.81 - 74, 87.5 - 108MHz)	108MHz	◇A mod=1kHz Δf=±22.5kHz	108MHz	2155	◇4	MAX
	87.5MHz (65.81MHz)		87.5MHz (65.81MHz)	5131		
VCO						
FM	98MHz, 1mV continuous wave	◇A	98MHz	3142	◇3	152kHz ±1kHz [1]
AM IF						
MW	450kHz connect pin 6 of IC 7101 (AM Osc.) with 3.3kΩ to Vcc	◇C Δf=±10kHz V_{RF} = 0.5mV (as low as possible)	IC 7101 36 100nF 220R	5111	◇5	max. f_o symmetric
			IC 7101 40 100nF 220R see remark [2]	5112		
AM AFC **MW**		◇C continuous wave V_{RF} = 2mV		5114	◇2	0 ± 2 mV DC
AM RF [3]						
MW [4] FM/MW/LW- and FM/MW-version (9kHz grid) 531 - 1602kHz	1494kHz	◇B Δf = ±30kHz V_{RF} as low as possible	1494kHz	2106	◇5	max. f_o symmetric
	558kHz		558kHz	5102		
LW	198kHz		198kHz	5103		
MW FM/AM-version, 10kHz grid 530 - 1700kHz	1500kHz		1500kHz	2106		
	560kHz		560kHz	5102		

ECO6, Sys + PA with frame aerial. 070799

Use Service Testprogram. By selecting the TUNER TEST test frequencies will be stored as preset frequencies automatically.

[1] If sensitivity of frequency counter is too low adjust to max. channel separation (input signal: stereo left 90% + 9%, adjust output on right channel to minimum)

[2] RC network serves for damping the IF-filter while adjusting the other one.

[3] For AM RF adjustments the original frame antenna has to be used !

[4] MW has to be aligned before LW.

↕ Repeat

7A-4

MISCELLANEOUS

101	2422 015 19376	SOCKET 2P CLICKFIT	USA only
102	4822 267 10283	SOCKET COAX, IEC 75Ω	not USA
103	4822 265 31184	JST CONNECTOR 2 POLE	
120	4822 265 11515	FFC SOCKET, 8P	

CAPACITORS

C101 ©	4822 126 13692	47pF	1%	63V	
C102 ©	4822 126 13838	100nF	10%	50V	not USA
C103 ©	5322 122 31647	1nF	10%	63V	
C104 ©	5322 122 32531	100pF	5%	50V	
C105 ©	4822 126 13838	100nF	10%	50V	USA only
C106	2020 800 00191	3-11pF TRIMCAP.,N450			
C107	4822 121 51319	1µF	20%	50V	
C120 ©	4822 126 13689	18pF	1%	63V	
C124 ©	5322 122 32654	22nF	10%	63V	
C125 ©	2020 552 96199	560pF	1%	50V	
C126 ©	5322 122 31863	330pF	5%	50V	
C127 ©	4822 126 14076	220nF	20%	25V	
C128	4822 124 40248	10µF	20%	63V	
C129	4822 124 41584	100µF	20%	10V	
C130 ©	5322 122 32654	22nF	10%	63V	
C131 ©	4822 126 13482	470nF	20%	16V	
C132 ©	4822 126 13482	470nF	20%	16V	
C133	4822 124 21913	1µF	20%	63V	
C134 ©	4822 126 13188	15nF	5%	63V	not USA
C134 ©	5322 122 32654	22nF	10%	63V	USA only
C135 ©	4822 126 13188	15nF	5%	63V	not USA
C135 ©	5322 122 32654	22nF	10%	63V	USA only
C136 ©	4822 126 14076	220nF	20%	25V	
C137 ©	4822 126 14076	220nF	20%	25V	
C138	4822 124 22652	2,2µF	20%	50V	
C139 ©	4822 126 14236	15pF	5%	50V	
C140 ©	4822 126 13695	82pF	1%	63V	
C141 ©	4822 126 13838	100nF	10%	50V	
C143 ©	4822 126 14076	220nF	20%	25V	
C144	4822 124 21913	1µF	20%	63V	
C145 ©	4822 122 33575	220pF	5%	50V	
C146 ©	4822 122 33575	220pF	5%	50V	
C147 ©	4822 122 33575	220pF	5%	50V	
C148 ©	4822 122 33127	2,2nF	10%	63V	
C149 ©	5322 122 32659	33pF	5%	50V	RDS only
C150 ©	4822 126 13838	100nF	10%	50V	
C152 ©	4822 126 12105	33nF	5%	63V	not for East Europe
C152 ©	5322 116 80853	560pF	5%	63V	for East Europe only
C153 ©	4822 126 13486	15pF	2%	63V	not for East Europe
C153 ©	4822 122 33926	12pF	2%	50V	for East Europe only
C155	2020 800 00191	3-11pF TRIMCAP.,N450			
C159 ©	5322 122 32659	33pF	5%	50V	
C164 ©	4822 126 13482	470nF	20%	16V	
C165 ©	4822 126 13838	100nF	10%	50V	
C166 ©	5322 122 31647	1nF	10%	63V	
C167 ©	4822 122 33926	12pF	5%	50V	
C169 ©	4822 122 33127	2,2nF	10%	63V	RDS only

RESISTORS

R101 ©	4822 051 20333	33kΩ	5%	0,1W	
R102 ©	4822 117 10837	100kΩ	1%	0,1W	
R103 ©	4822 051 20822	8,2kΩ	5%	0,1W	
R104 ©	4822 117 13577	330Ω	1%	0,1W	
R105 ©	4822 117 11503	220Ω	5%	0,1W	
R132 ©	4822 051 20479	47Ω	5%	0,1W	
R134 ©	4822 051 20223	22kΩ	5%	0,1W	
R141 ©	4822 117 11148	56kΩ	1%	0,1W	
R142	4822 100 12159	TRIMPOT. 100kΩ			
R143 ©	4822 051 20223	22kΩ	5%	0,1W	RDS only
R144 ©	4822 051 10102	1kΩ	2%	0,25W	RDS only
R145 ©	4822 117 11449	2,2kΩ	1%	0,1W	
R146 ©	4822 051 20229	22Ω	5%	0,1W	
R152 ©	4822 051 20471	470Ω	5%	0,1W	
R153 ©	4822 051 20471	470Ω	5%	0,1W	
R154 ©	4822 117 13577	330Ω	1%	0,1W	
R155 ©	4822 117 11503	220Ω	5%	0,1W	
R156 ©	4822 117 10837	100kΩ	1%	0,1W	
R157 ©	4822 117 10837	100kΩ	1%	0,1W	
R158 ©	4822 051 20471	470Ω	5%	0,1W	
R159 ©	4822 051 20471	470Ω	5%	0,1W	
R160 ©	4822 051 20471	470Ω	5%	0,1W	
R161 ©	4822 051 20223	22kΩ	5%	0,1W	
R167 ©	4822 051 20121	120Ω	5%	0,1W	
R168 ©	4822 051 20121	120Ω	5%	0,1W	
R169 ©	4822 051 20154	150kΩ	5%	0,1W	
R170 ©	4822 117 10837	100kΩ	1%	0,1W	
R172 ©	4822 051 20562	5,6kΩ	5%	0,1W	
R176 ©	4822 051 20333	33kΩ	5%	0,1W	RDS only
R181 ©	4822 051 10102	1kΩ	2%	0,25W	
4103 ©	4822 051 20008	CHIP JUMPER 0805			
4106 ©	4822 051 20008	CHIP JUMPER 0805			
4107 ©	4822 051 20008	CHIP JUMPER 0805			
4108 ©	4822 051 20008	CHIP JUMPER 0805			

COILS

5102	4822 157 71634	RF-COIL MW
5109	4822 242 70665	FM-IF FILTER 10,7MHz
5110	4822 242 70665	FM-IF FILTER 10,7MHz
5111	2422 549 44023	AM-IF FILTER 450kHz
5112	4822 157 70302	AM-IF FILTER 450kHz
5114	4822 157 70302	AM-IF FILTER 450kHz
5119	4822 157 11443	DISCRIMINATOR COIL
5121	4822 242 10261	QUARTZ 75kHz
5123	2422 549 44108	RF-COIL, AM-OSCILLATOR
5130	4822 157 11843	RF COIL 1,5 TURNS
5131	4822 157 11843	RF COIL 1,5 TURNS

DIODES

6103 ©	5322 130 34337	BAV99
6105 ©	4822 130 83075	HN1V02H
6106 ©	4822 130 83757	BAS216
6107 ©	9340 386 90115	BZX284-C11
6120 ©	4822 130 83757	BAS216
6130 ©	4822 130 82833	1SV228
6131 ©	4822 130 82833	1SV228

TRANSISTORS

7102	4822 130 42131	BF550	
7103 ©	5322 130 42756	BC857C	RDS only
7111 ©	5322 130 42755	BC847C	
7112	4822 130 44503	BC547C	

INTEGRATED CIRCUITS

7101 ©	9351 740 80557	TEA5757H/V1, RADIO IC

POWER MODULE PWR207

(6 x 75W / 7 x 75W)

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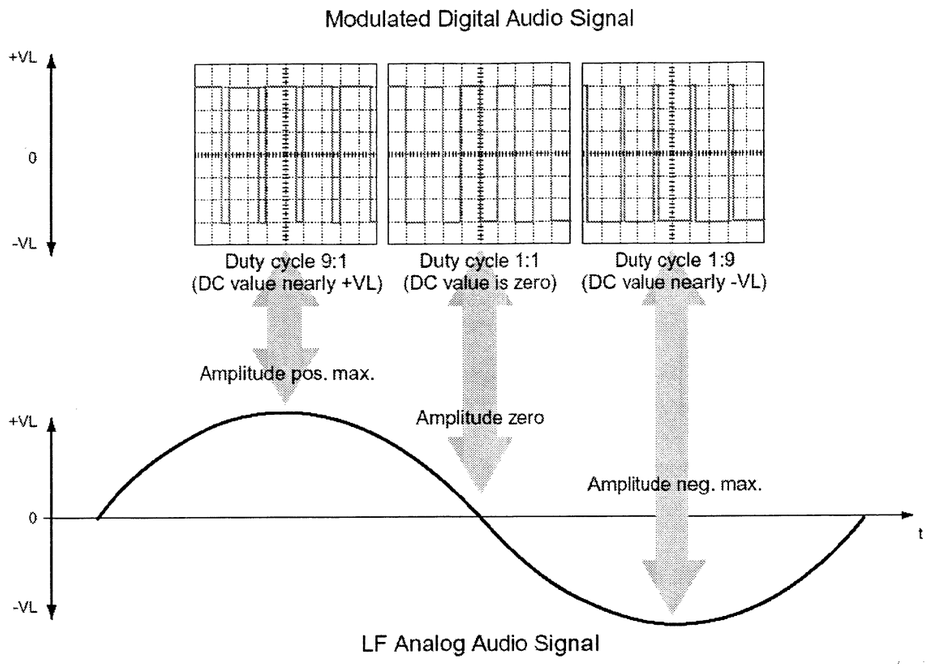
8-1

6-channel class-D amplifier

Basic operation of a class-D amplifier

Basically, the output stage of a class-D amplifier outputs a continuous square wave swinging between positive and negative power supplies with a fixed frequency ("clock" frequency) far beyond the audible range. The duty cycle of this square wave is modulated with the audio signal. The output is followed by a low-pass filter which eliminates the clock frequency and allows only the audio signal going to the speaker. See simplified drawing below.



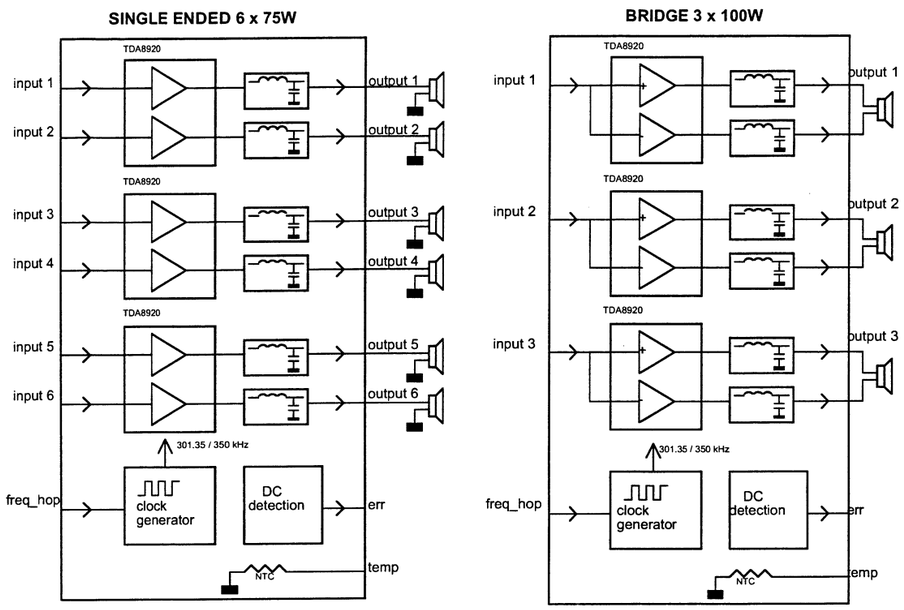
Compared to a conventional power amplifier the benefits of the Class-D amplifier are:

- higher effiency
- lower power dissipation
- smaller heatsink required
- smaller mains transformer required

The main disadvantage of this concept is:

- The amplifier is operating with a high-frequency square wave at high amplitude and currents. This requires special precautions to prevent excessive electromagnetic ratiation (EMC).

lock diagram and operation



clock oscillator

he clock frequency is generated around IC7600. Using 2 extra transistors (7602 and 7608) and 2 ceramic resonators it can be operated at frequencies: 602.7kHz and 700kHz. The frequency is selected by the signal "FREQ_HOP" coming from connector 1301 pin 9.
Vhen FREQ_HOP is low, the output of 7600-1 will be high. This switches transistor 7602 on, and connects resonator 1600 (602.7kHz) to inverter 600-3. Similarly, when FREQ_HOP is high, resonator 1601 is connected to 7600-3.
he output frequency is divided by two by IC7607, resulting in 301.35kHz or 350kHz.
he purpose of a selectable clock frequency is related to the disturbance of the tuner which is built-in together with this amplifier. In MW, the oftware of the set microprocessor will select the other clock frequency in case the amplifier clock interferes with the tuned station.

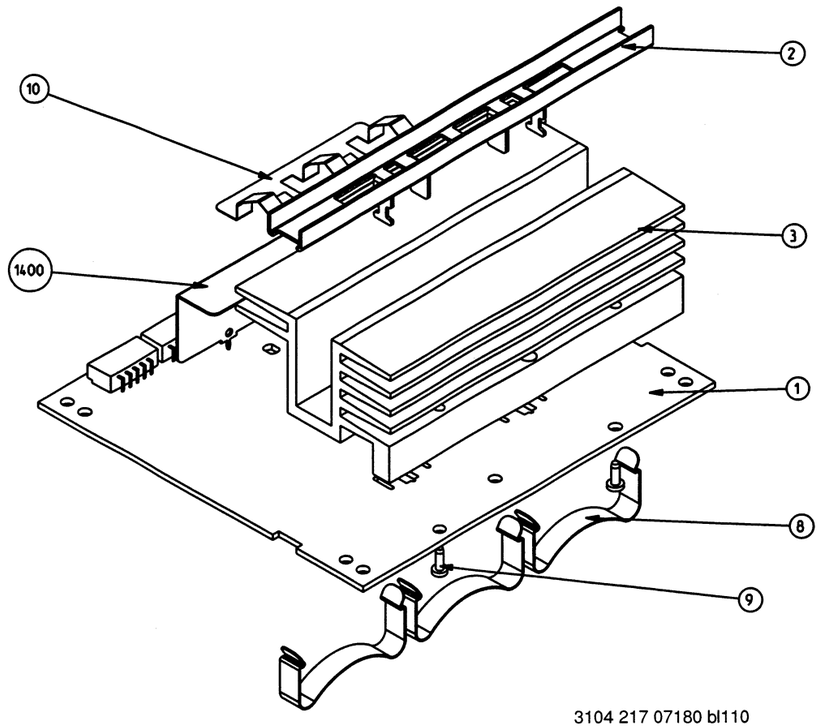
Class-D amplifier TDA8920 and low-pass filter

he TDA8920 is a two channel audio power amplifier using class-D technology. The audio input signal is converted into a digital Pulse Width Modulated (PWM) signal via an analog input stage and PWM modulator. It is then fed to the power stage which outputs a high power PWM ignal which switches between the main supply lines.
he TDA8920 is followed by a 2nd-order low-pass filter. It has a cut-off frequency around 50kHz and converts the PWM signal into analog audio ignal across the loudspeaker.
he TDA8920 has a temperature protection and a current limiter built-in.
urthermore, the IC can be put in active, mute and standby mode.
Active mode (amplifier fully operational) with output signal.
Mute mode; the amplifiers are operational, but the audio is muted
Standby mode; with a very low supply current, the output stage is switched off.

DC-detection

he DC-detection circuit monitors all 6 outputs for DC. Whenever one or more outputs contain DC for more than 1 second, the circuit will be ctivated. A positive voltage will activate transistor 7710 and pin 10 of connector 1301 will be pulled down. In case of a negative voltage, transistor 716 will be activated, which in turn activates 7710. The set microprocessor will take further action.

MECHANICAL EXPLODED VIEW



3104 217 07180 bl110

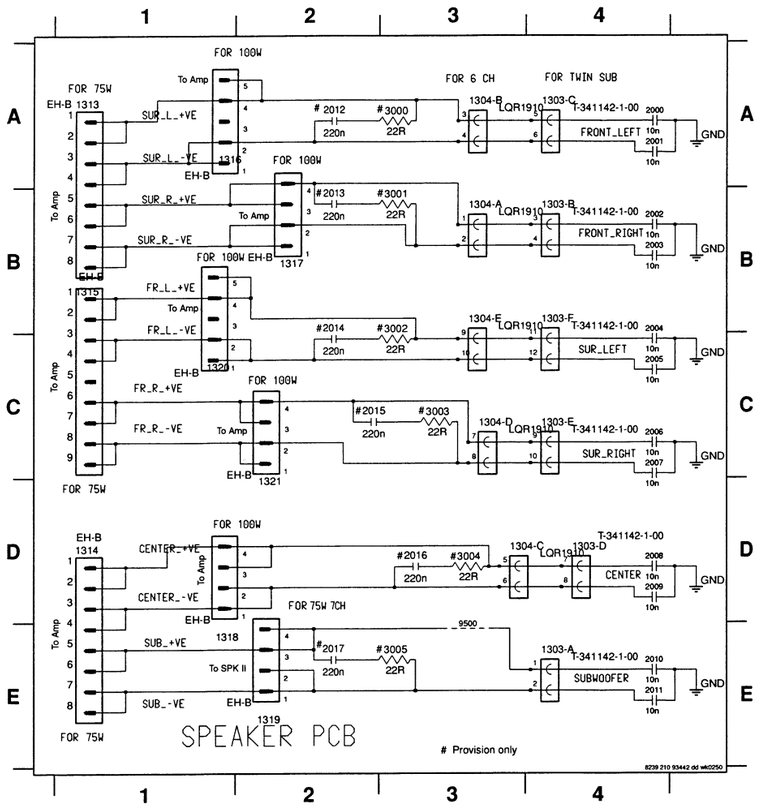
MECHANICAL PARTS LIST & SCREWS

8	3104 211 29861	SPRING 6 CHANNEL
9	-	D2.3 x 8
10	3104 211 29881	EARTH SPRING

Note: Only the parts mentioned in this list are normal service spare parts.

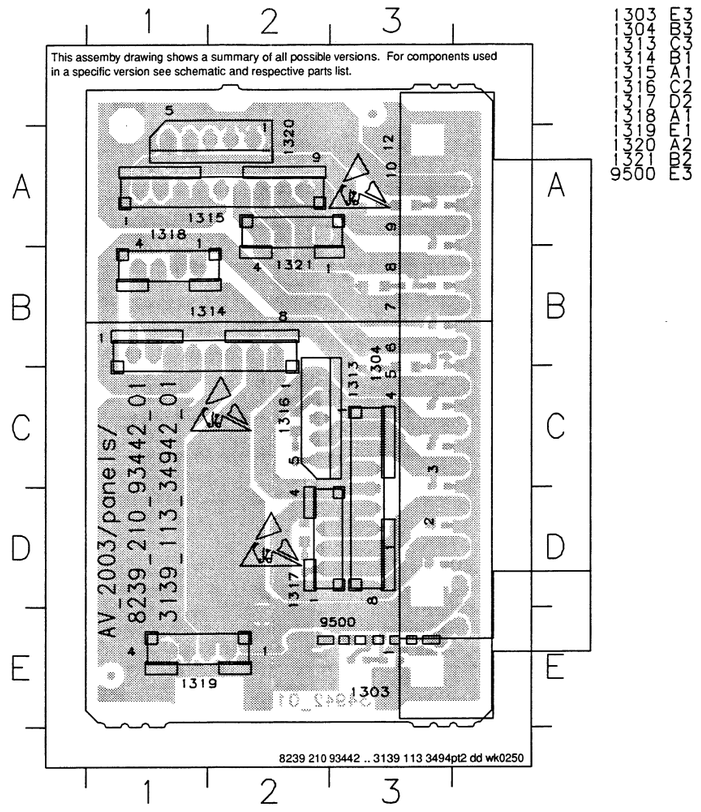
SPEAKER (SPK I) BOARD - CIRCUIT DIAGRAM

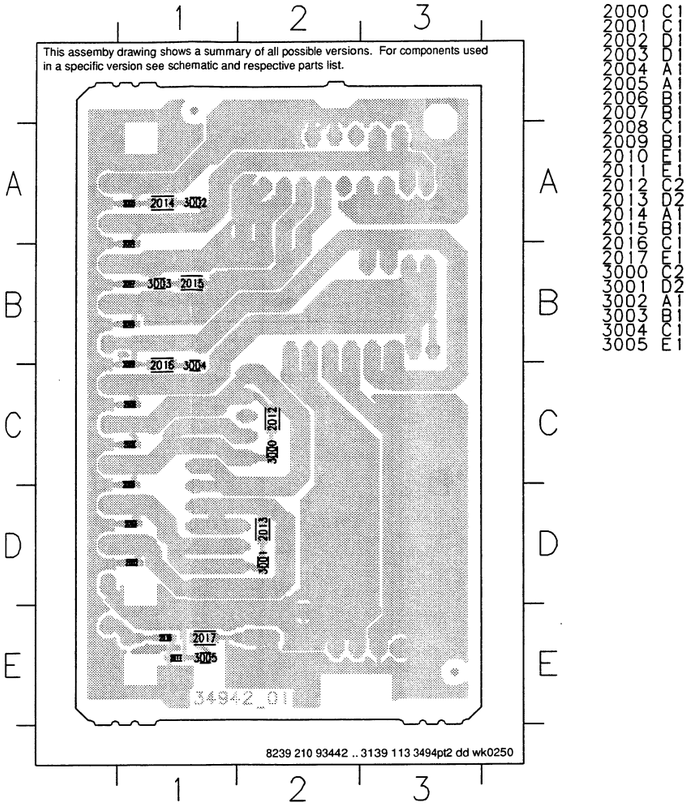
1303-A E4	1303-F B4	1304-E B3	1317 B2	2000 A4	2005 C4	2010 E4	2015 C2	3002 B3
1303-B B4	1304-A B3	1313 A1	1318 E2	2001 A4	2006 C4	2011 E4	2016 D3	3003 C3
1303-C A4	1304-B A3	1314 D1	1319 E2	2002 B4	2007 C4	2012 A2	2017 E2	3004 D3
1303-D D4	1304-C D3	1315 B1	1320 C1	2003 B4	2008 D4	2013 B2	3000 A3	3005 E3
1303-E C4	1304-D C3	1316 A2	1321 C2	2004 B4	2009 D4	2014 B2	3001 B3	9500 E3



SPEAKER (SPK I) BOARD - COMPONENT & CHIP LAYOUTS

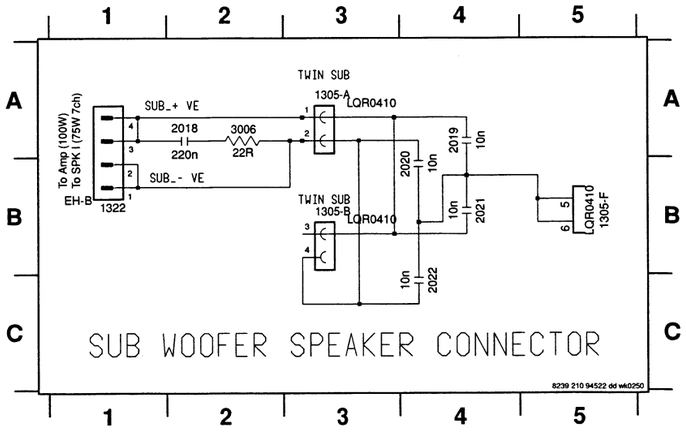
8-3



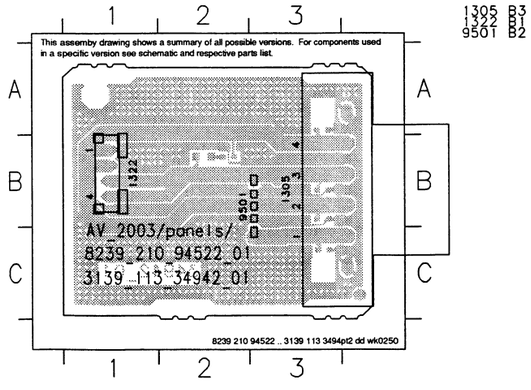


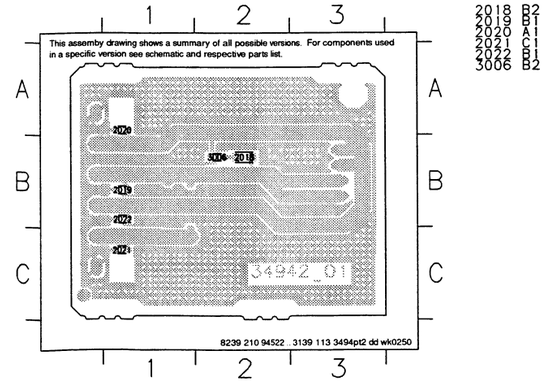
SW-OUT (SPK II) BOARD - CIRCUIT DIAGRAM

1305-A A3	1305-F B5	2018 A2	2020 B4	2022 C4
1305-B B3	1322 B1	2019 A4	2021 B4	3006 A2



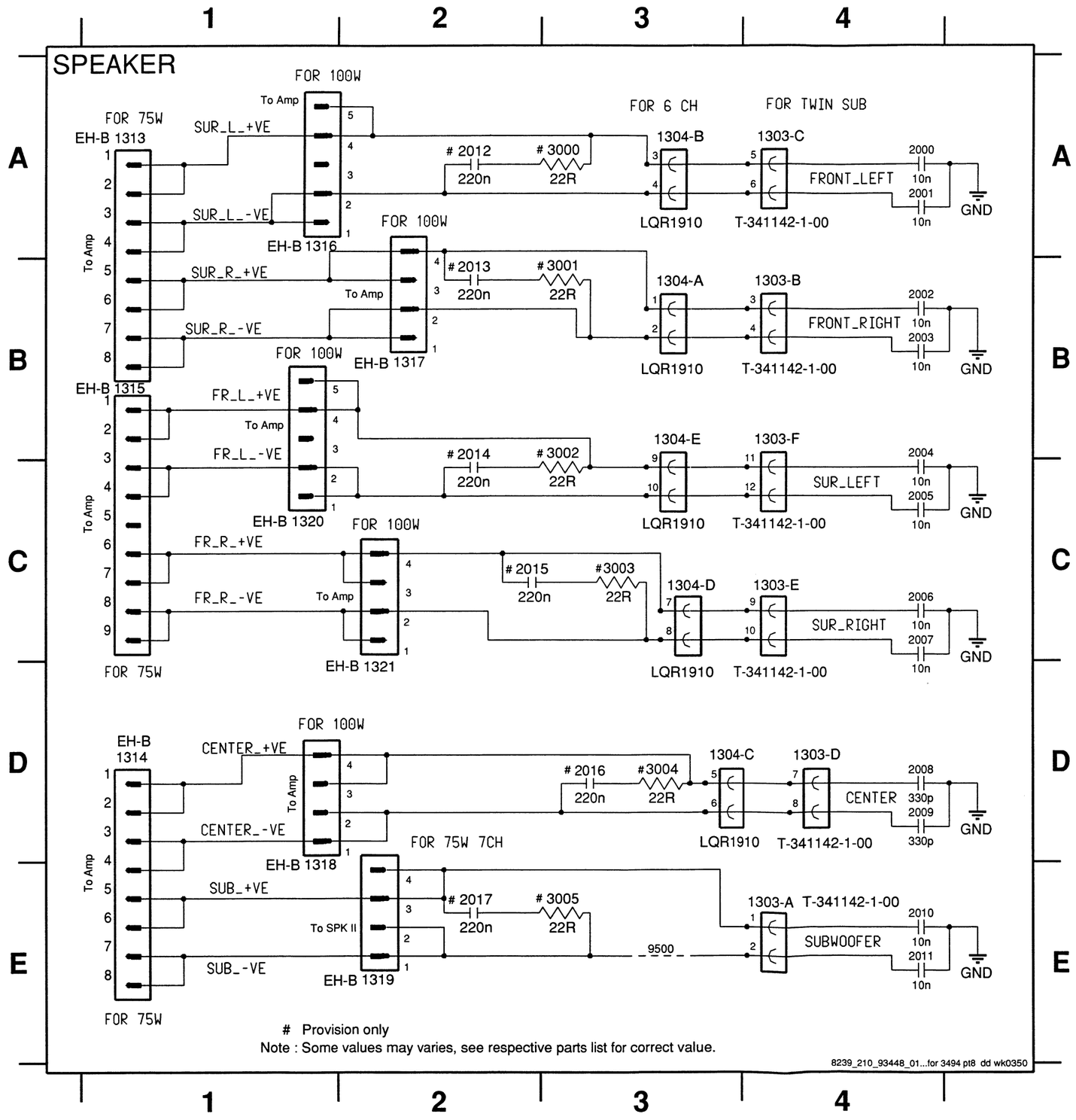
SW-OUT (SPK II) BOARD - COMPONENT & CHIP LAYOUTS


This assemby drawing shows a summary of all possible versions. For components used in a specific version see schematic and respective parts list.
1305 B3
1322 B1
9501 B2
AV_2003/panels/
8239_210_94522_01
3139_113_34942_01
8239 210 94522 .. 3139 113 3494pt2 dd wk0250


This assemby drawing shows a summary of all possible versions. For components used in a specific version see schematic and respective parts list.
2018 B2
2019 B1
2020 A1
2021 C1
2022 B1
3006 B2
34942_01
8239 210 94522 .. 3139 113 3494pt2 dd wk0250

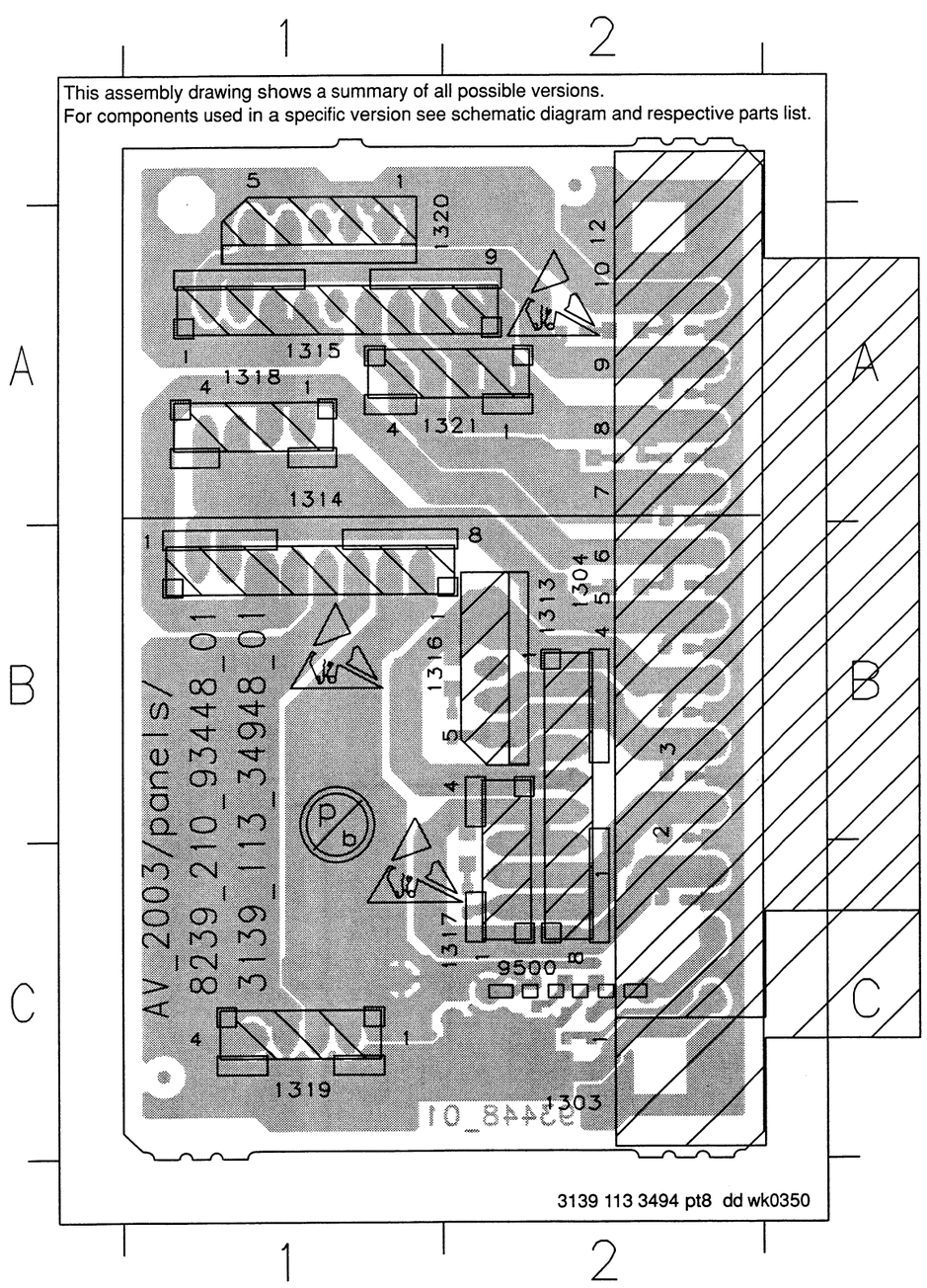
8-3a

SPEAKER (SPK I) BOARD - CIRCUIT DIAGRAM (For pcb layout ...93448)

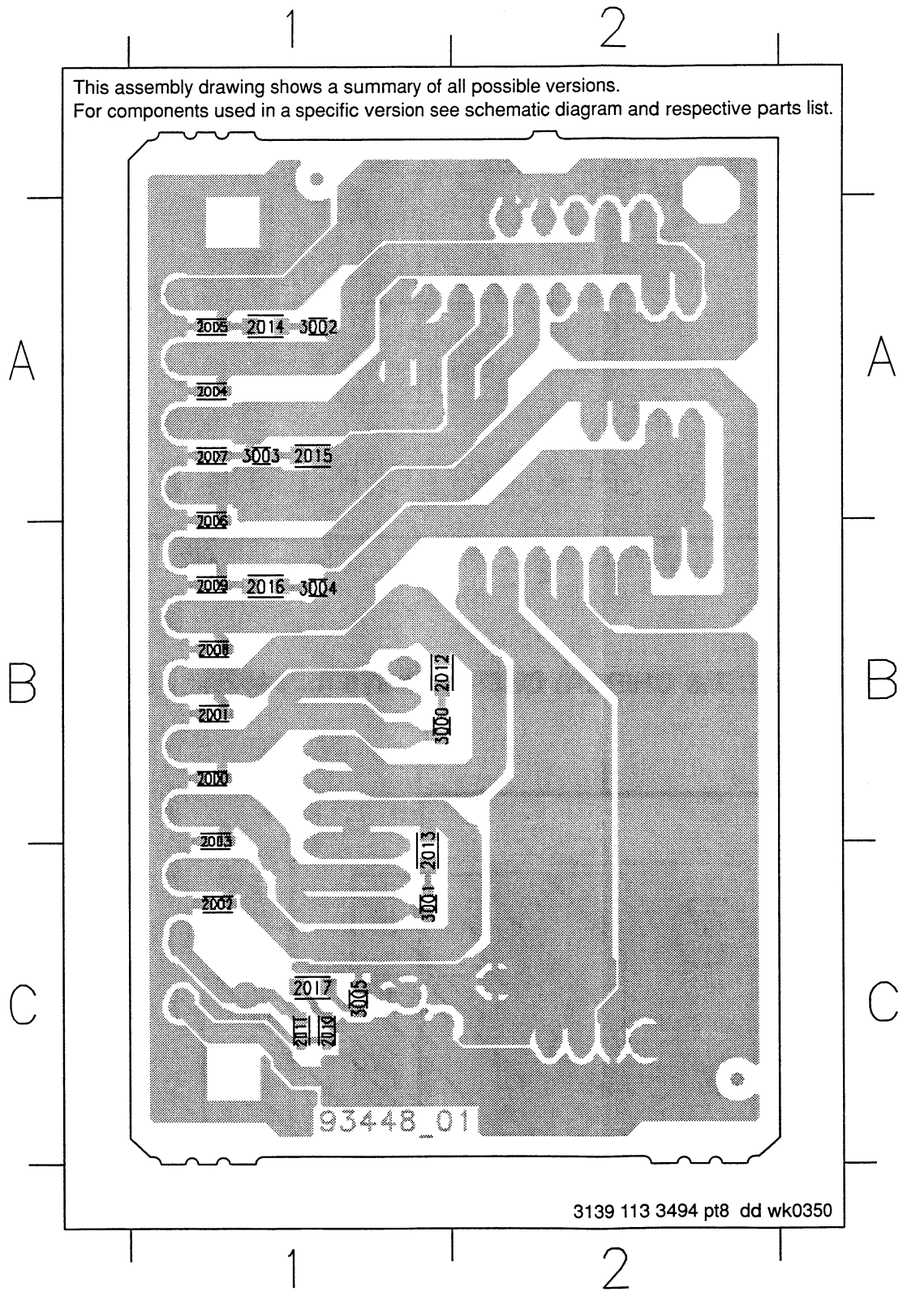


1303-A E4
1303-B B4
1303-C A4
1303-D D4
1303-E C4
1303-F B4
1304-A B3
1304-B A3
1304-C D3
1304-D C3
1304-E B3
1313 A1
1314 D1
1315 B1
1316 A2
1317 B2
1318 E2
1319 E2
1320 C1
1321 C2
2000 A4
2001 A4
2002 B4
2003 B4
2004 B4
2005 C4
2006 C4
2007 C4
2008 D4
2009 D4
2010 E4
2011 E4
2012 A2
2013 B2
2014 B2
2015 C2
2016 D3
2017 E2
3000 A3
3001 B3
3002 B3
3003 C3
3004 D3
3005 E3
9500 E3

SPEAKER (SPK I) BOARD - COMPONENT & CHIP LAYOUTS (pcb layout ...93448)



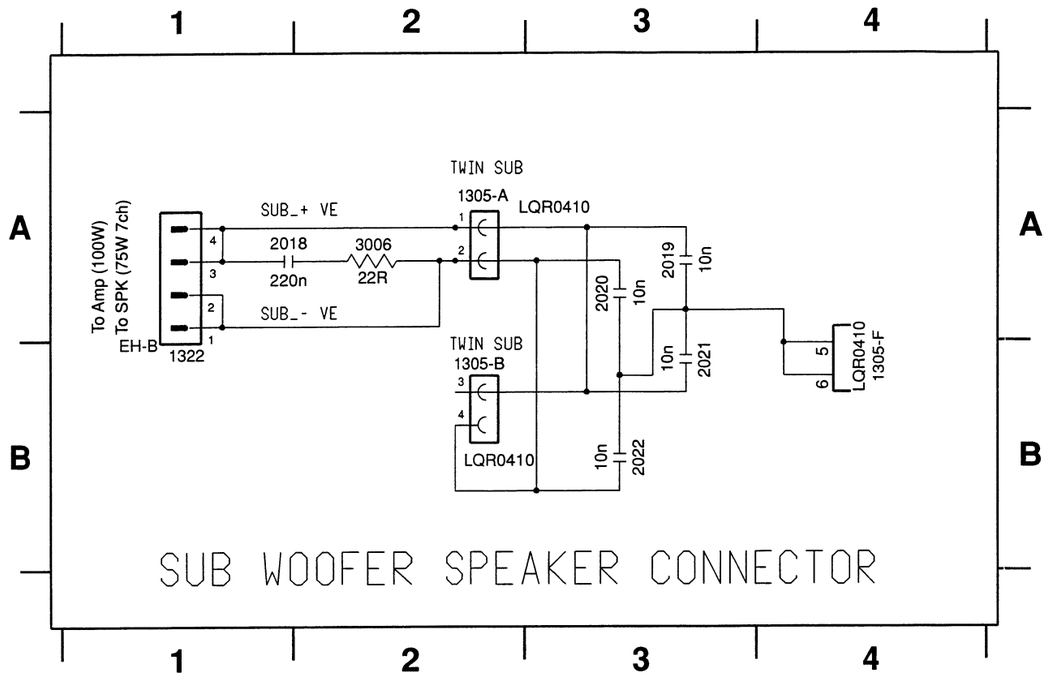
1303 C2
1304 B2
1313 B2
1314 A1
1315 A1
1316 B1
1317 C2
1318 A1
1319 C1
1320 A1
1321 A2
9500 C2



2000 B1
2001 B1
2002 C1
2003 B1
2004 A1
2005 A1
2006 A1
2007 A1
2008 B1
2009 B1
2010 C1
2011 C1
2012 B1
2013 C1
2014 A1
2015 A1
2016 B1
2017 C1
3000 B1
3001 C1
3002 A1
3003 A1
3004 B1
3005 C1

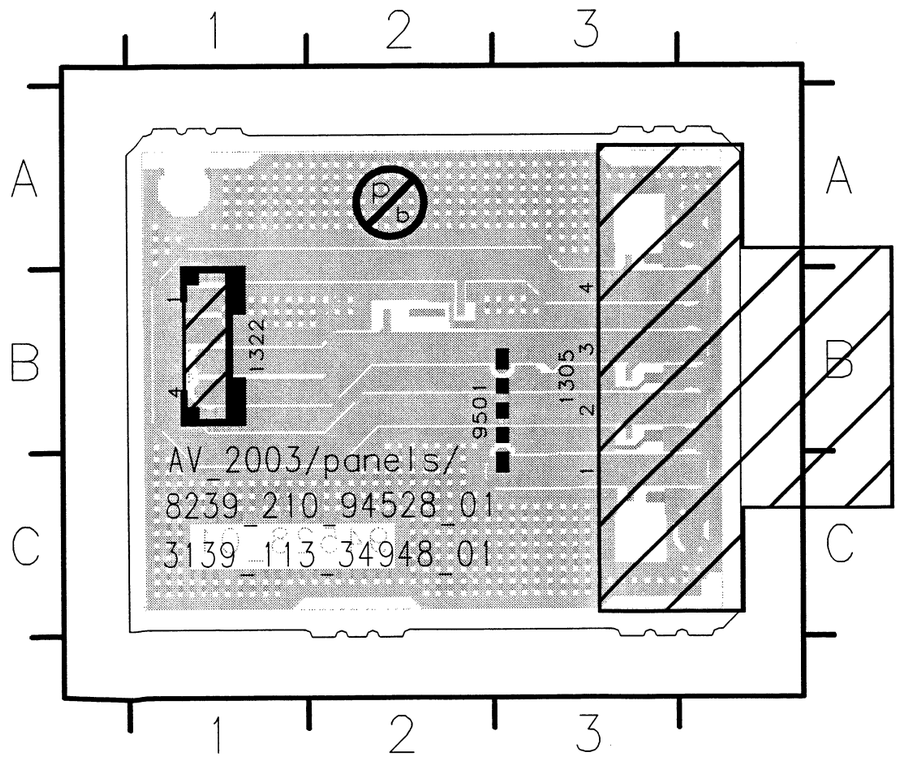
8-3c

SW-OUT (SPK II) BOARD - CIRCUIT DIAGRAM (For pcb layout ... 94528)

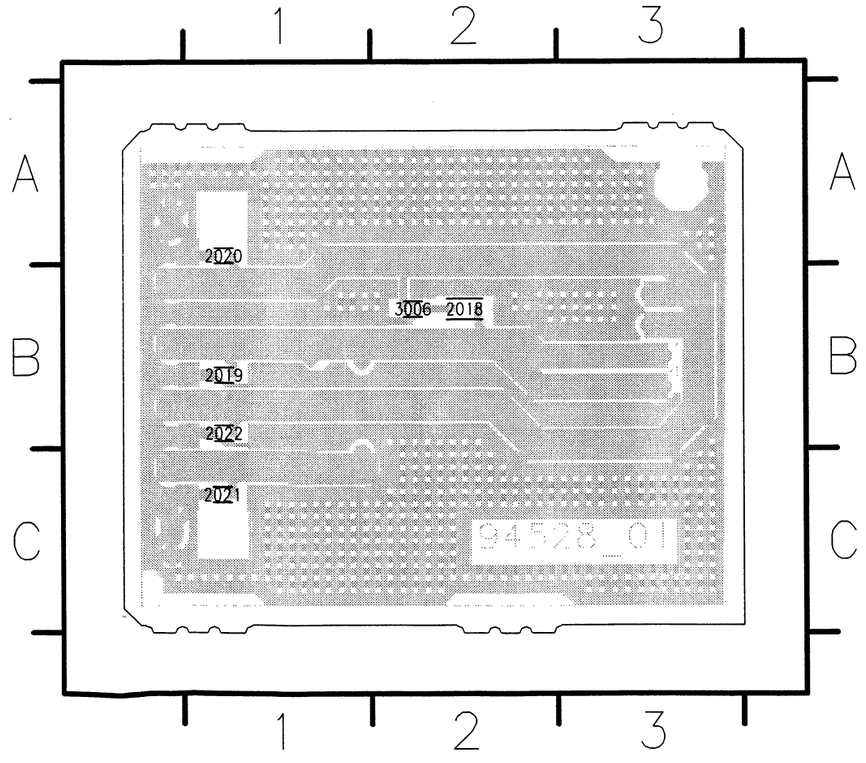


1305-A A2
1305-B B2
1305-F B4
1322 B1
2018 A1
2019 A3
2020 A3
2021 B3
2022 B3
3006 A2

SW-OUT (SPK II) BOARD - COMPONENT & CHIP LAYOUTS (pcb layout... 94528)



1305 B3
1322 B1
9501 B2

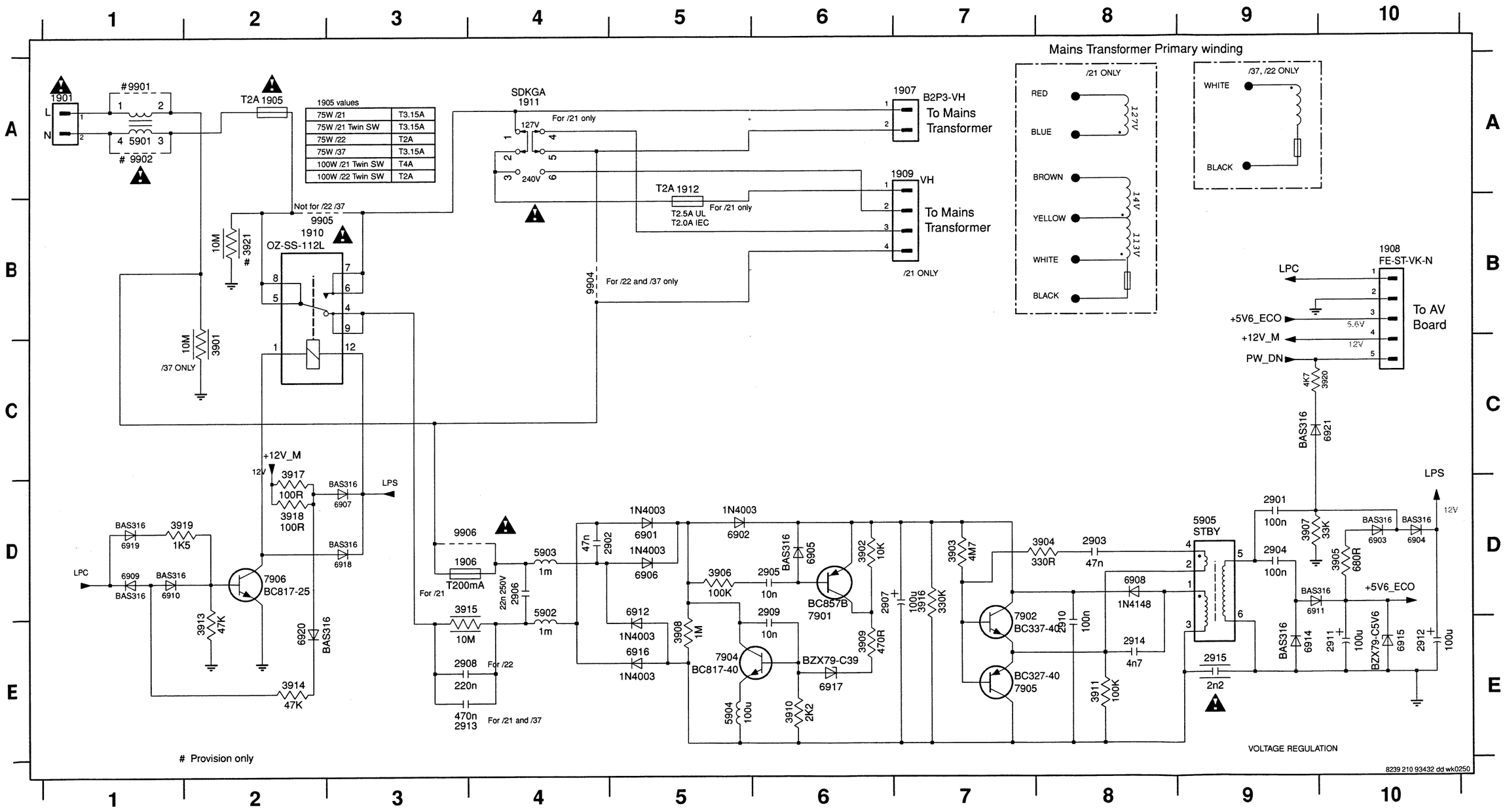


2018 B2
2019 B1
2020 A1
2021 C1
2022 B1
3006 B2

8-4

MAINS & ECO STBY BOARD - CIRCUIT DIAGRAM

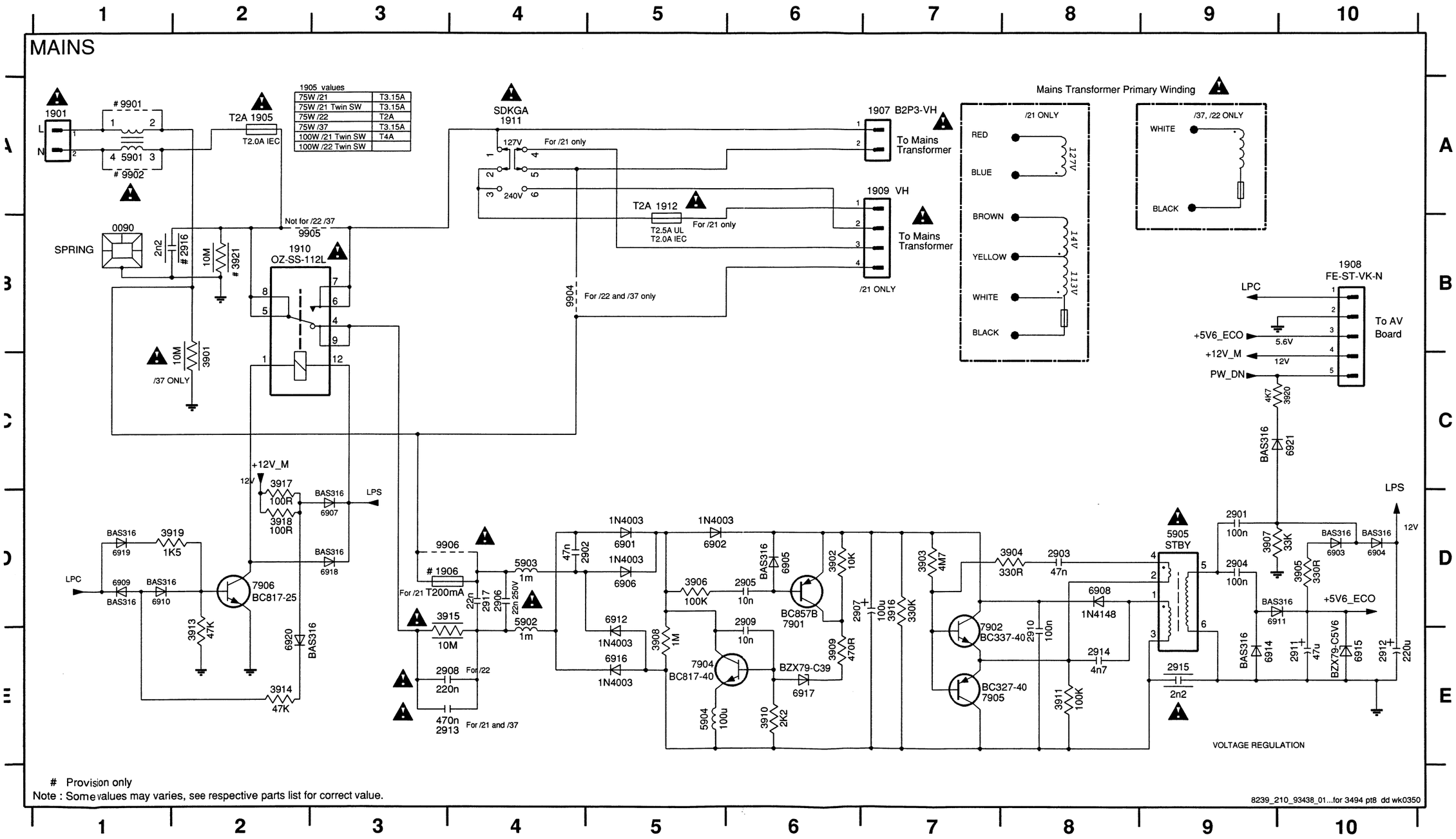
1901 A1	1908 B10	1912 A5	2904 D9	2908 E3	2912 E10	3901 C2	3905 D10	3909 E6	3914 E2	3918 D2	5901 A1	5905 D9	6904 D10	6908 D8	6912 D5	6917 E6	6921 C10	7905 E7	9904 B4
1905 A2	1909 A6	2901 D9	2905 D6	2909 D6	2913 E3	3902 D6	3906 D5	3910 E6	3915 D3	3919 D1	5902 D4	6901 D5	6905 D6	6909 D1	6914 E9	6918 D3	7901 D6	7906 D2	9905 B2
1906 D3	1910 B2	2902 D4	2906 D4	2910 E8	2914 E8	3903 D7	3907 D9	3911 E8	3916 D7	3920 C10	5903 D4	6902 D5	6906 D5	6910 D1	6915 E10	6919 D1	7902 E7	9901 A1	9906 D3
1907 A7	1911 A4	2903 D8	2907 D6	2911 E10	2915 E9	3904 D8	3908 E5	3913 E2	3917 C2	3921 B2	5904 E5	6903 D10	6907 D3	6911 D9	6916 E5	6920 E2	7904 E5	9902 A1	



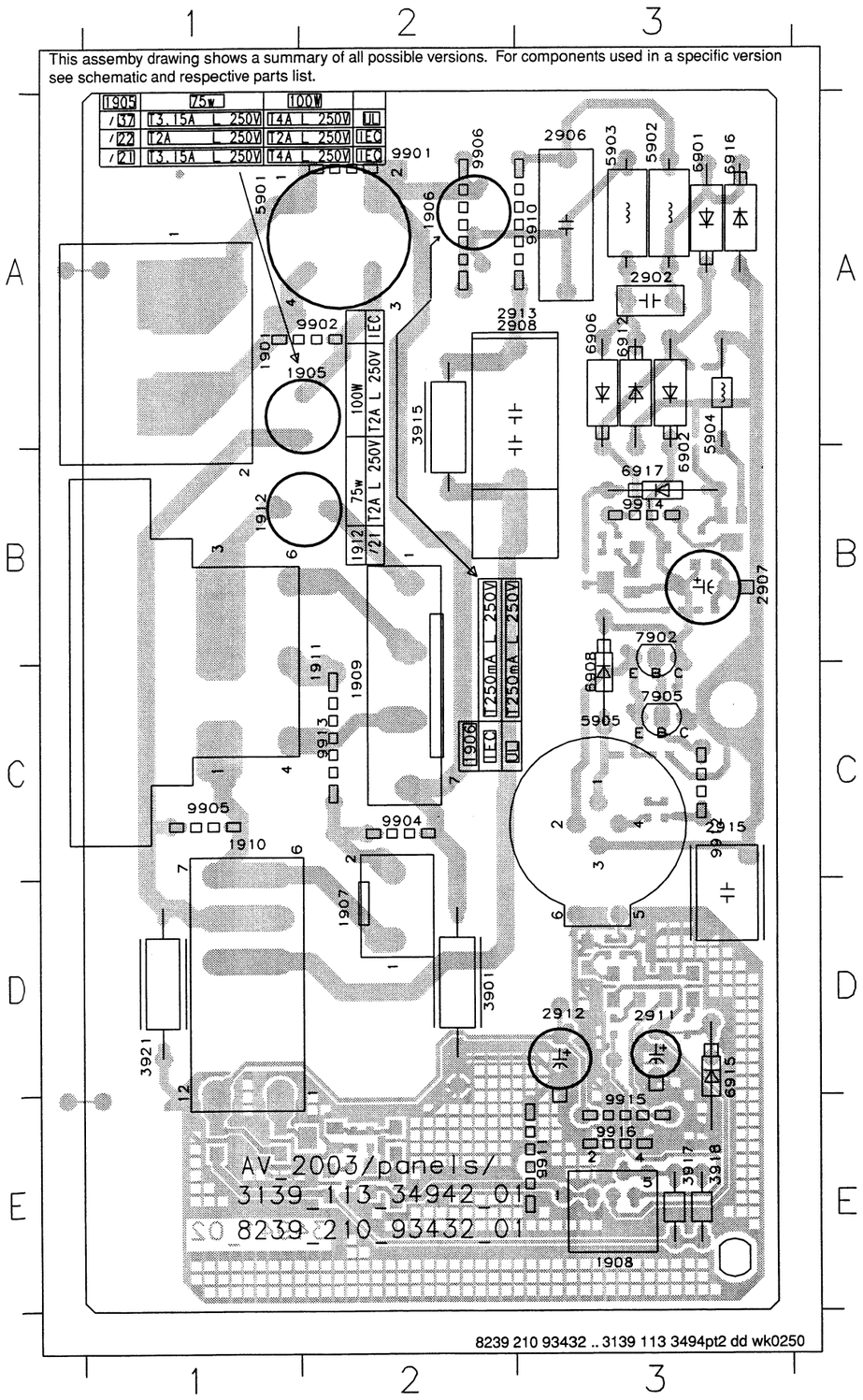
8-4a

MAINS & ECO STBY BOARD - CIRCUIT DIAGRAM (For pcb layout ... 93438)

0090 B1	1907 A7	1911 A4	2903 D8	2907 D6	2911 E10	2915 E9	3902 D6	3906 D5	3910 E6	3915 D4	3919 D2	5902 D4	6901 D5	6905 D6	6909 D1	6914 E9	6918 D3	7901 D6	7906 D2	9905 B2
1901 A1	1908 B10	1912 A5	2904 D9	2908 E3	2912 E10	2916 B2	3903 D7	3907 D9	3911 E8	3916 D7	3920 C10	5903 D4	6902 D5	6906 D5	6910 D1	6915 E10	6919 D1	7902 E7	9901 A1	9906 D3
1905 A2	1909 A7	2901 D9	2905 D6	2909 D6	2913 E3	2917 D4	3904 D8	3908 E5	3913 E2	3917 C2	3921 B2	5904 E5	6903 D10	6907 D3	6911 D9	6916 E5	6920 E2	7904 E5	9902 A1	
1906 D3	1910 B2	2902 D4	2906 D4	2910 E8	2914 E8	3901 C2	3905 D10	3909 E6	3914 E2	3918 D2	5901 A1	5905 D9	6904 D10	6908 D8	6912 D5	6917 E6	6921 C10	7905 E7	9904 B4	

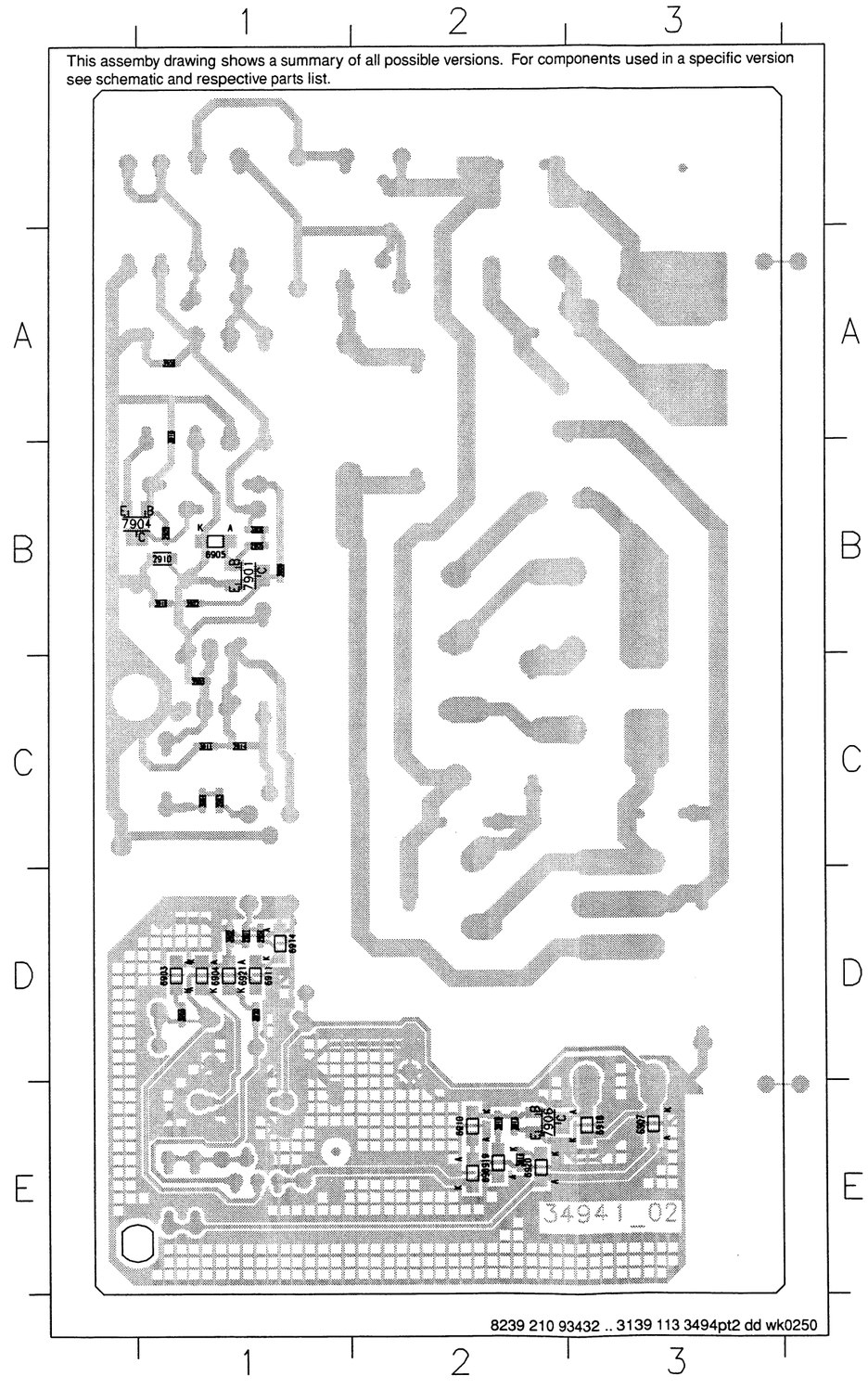


MAINS & ECO STBY BOARD - COMPONENT LAYOUT


This assemby drawing shows a summary of all possible versions. For components used in a specific version see schematic and respective parts list.
1905 75w 100W
T3.15A L 250V T4A L 250V
T2A L 250V T2A L 250V
T3.15A L 250V T4A L 250V
T2A L 250V
T250mA L 250V
AV_2003/panels/
3139_113_34942_01
SO_8239_210_93432_01
8239 210 93432 .. 3139 113 3494pt2 dd wk0250

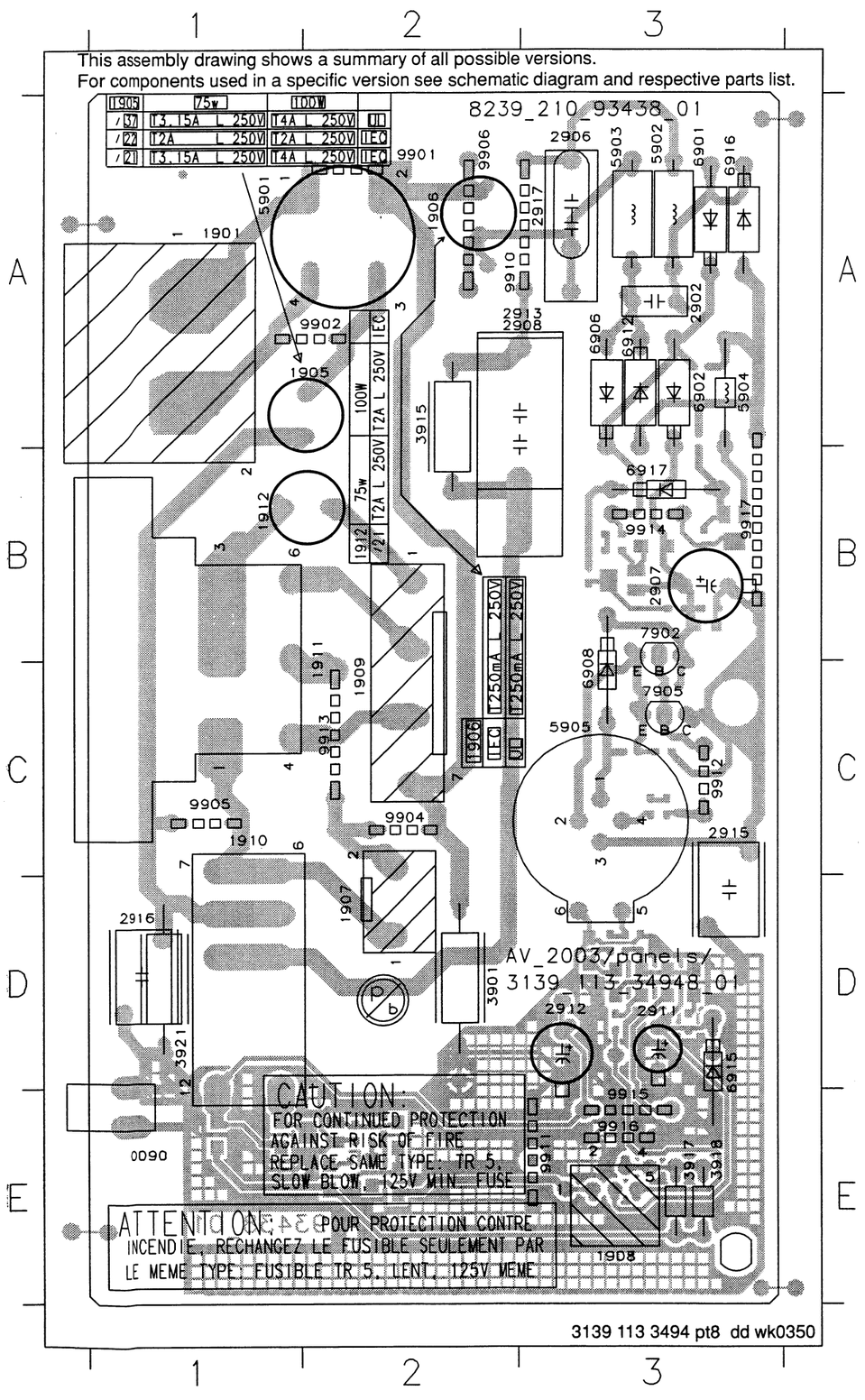
1901	A1
1905	A2
1906	A2
1907	D2
1908	E3
1909	C2
1910	C1
1911	B2
1912	B1
2902	A3
2906	A3
2907	B3
2908	A3
2911	D3
2912	D3
2913	A3
2915	C3
3901	D2
3915	A2
3917	E3
3918	E3
3921	D1
5901	A1
5902	A3
5903	A3
5904	A3
5905	C3
6901	A3
6902	B3
6906	A3
6908	C3
6912	A3
6915	D3
6916	A3
6917	B3
7902	B3
7905	C3
9901	A2
9902	A2
9904	C2
9905	C1
9906	A2
9910	A3
9911	E3
9912	C3
9913	C2
9914	B3
9915	E3
9916	E3

MAINS & ECO STBY BOARD - CHIP LAYOUT


This assemby drawing shows a summary of all possible versions. For components used in a specific version see schematic and respective parts list.
34941_02
8239 210 93432 .. 3139 113 3494pt2 dd wk0250

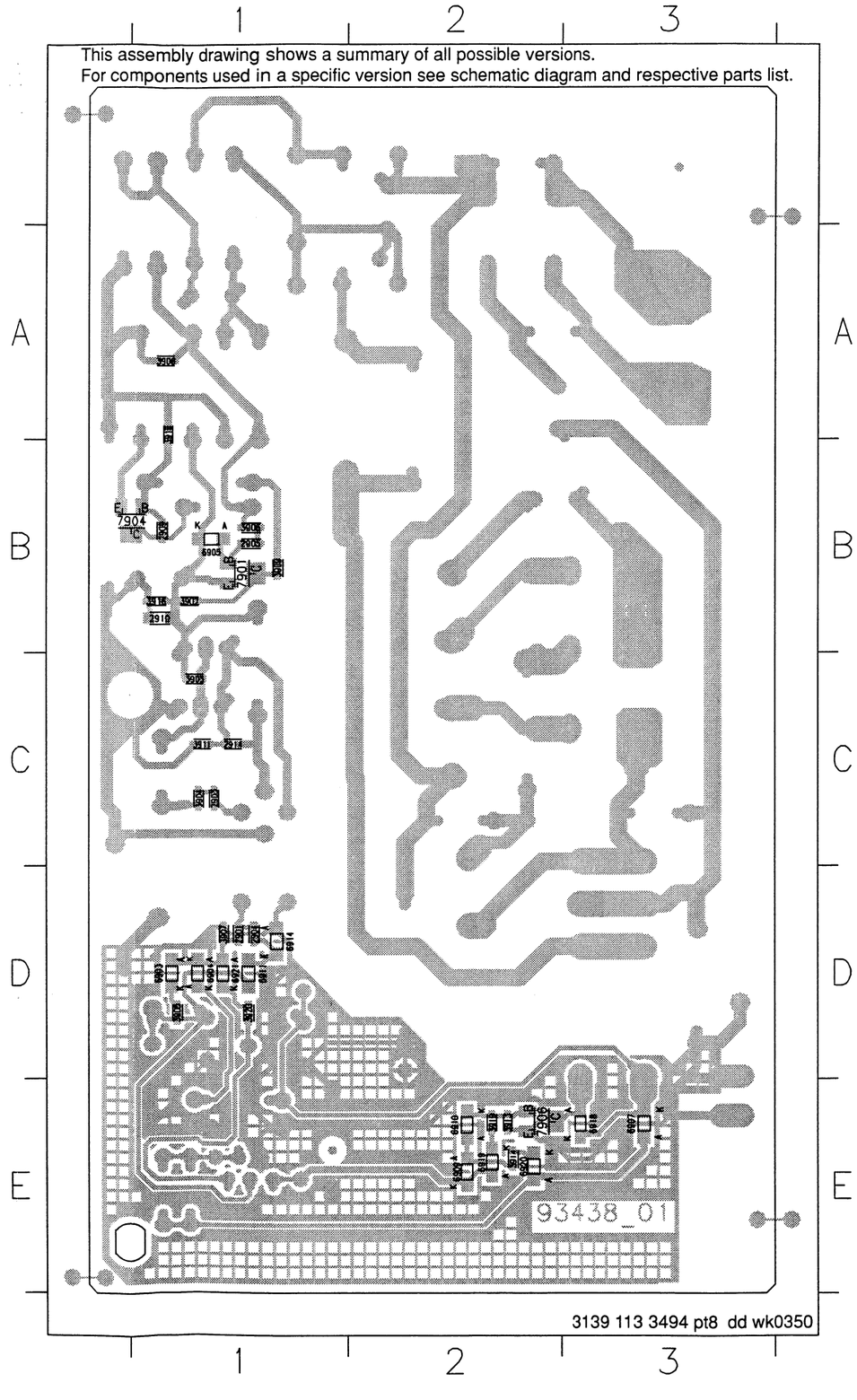
2901	D1
2903	C1
2904	D1
2905	B1
2909	B1
2910	B1
2914	C1
3902	B1
3903	C1
3904	C1
3905	D1
3906	B1
3907	D1
3908	A1
3909	B1
3910	A1
3911	C1
3913	E2
3914	E2
3916	B1
3919	E2
3920	D1
6903	D1
6904	D1
6905	B1
6907	E3
6909	E2
6910	E2
6911	D1
6914	D1
6918	E3
6919	E2
6920	E2
6921	D1
7901	B1
7904	B1
7906	E2

MAINS & ECO STBY BOARD - COMPONENT LAYOUT (pcb layout ... 93438)


This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram and respective parts list.
8239_210_93438_01
AV_2003/panels/
3139_113_34948_01
CAUTION:
FOR CONTINUED PROTECTION
AGAINST RISK OF FIRE
REPLACE SAME TYPE. TR 5.
SLOW BLOW, 125V MIN. FUSE
ATTENTION: POUR PROTECTION CONTRE
INCENDIE, REMPLACEZ LE FUSIBLE SEULEMENT PAR
LE MEME TYPE: FUSIBLE TR 5, LENT, 125V MINI
3139 113 3494 pt8 dd wk0350

0090 E1
1901 A1
1905 A2
1906 A2
1907 D2
1908 E3
1909 C2
1910 C1
1911 B2
1912 B1
2902 A3
2906 A3
2907 B3
2908 A3
2911 D3
2912 D3
2913 A3
2915 C3
2916 D1
2917 A3
3901 D2
3915 A2
3917 E3
3918 E3
3921 D1
5901 A1
5902 A3
5903 A3
5904 A3
5905 C3
6901 A3
6902 A3
6906 A3
6908 C3
6912 A3
6915 D3
6916 A3
6917 B3
7902 B3
7905 C3
9901 A2
9902 A2
9904 C2
9905 C1
9906 A2
9910 A2
9911 E3
9912 C3
9913 C2
9914 B3
9915 E3
9916 E3
9917 B3

MAINS & ECO STBY BOARD - CHIP LAYOUT (pcb layout ... 93438)

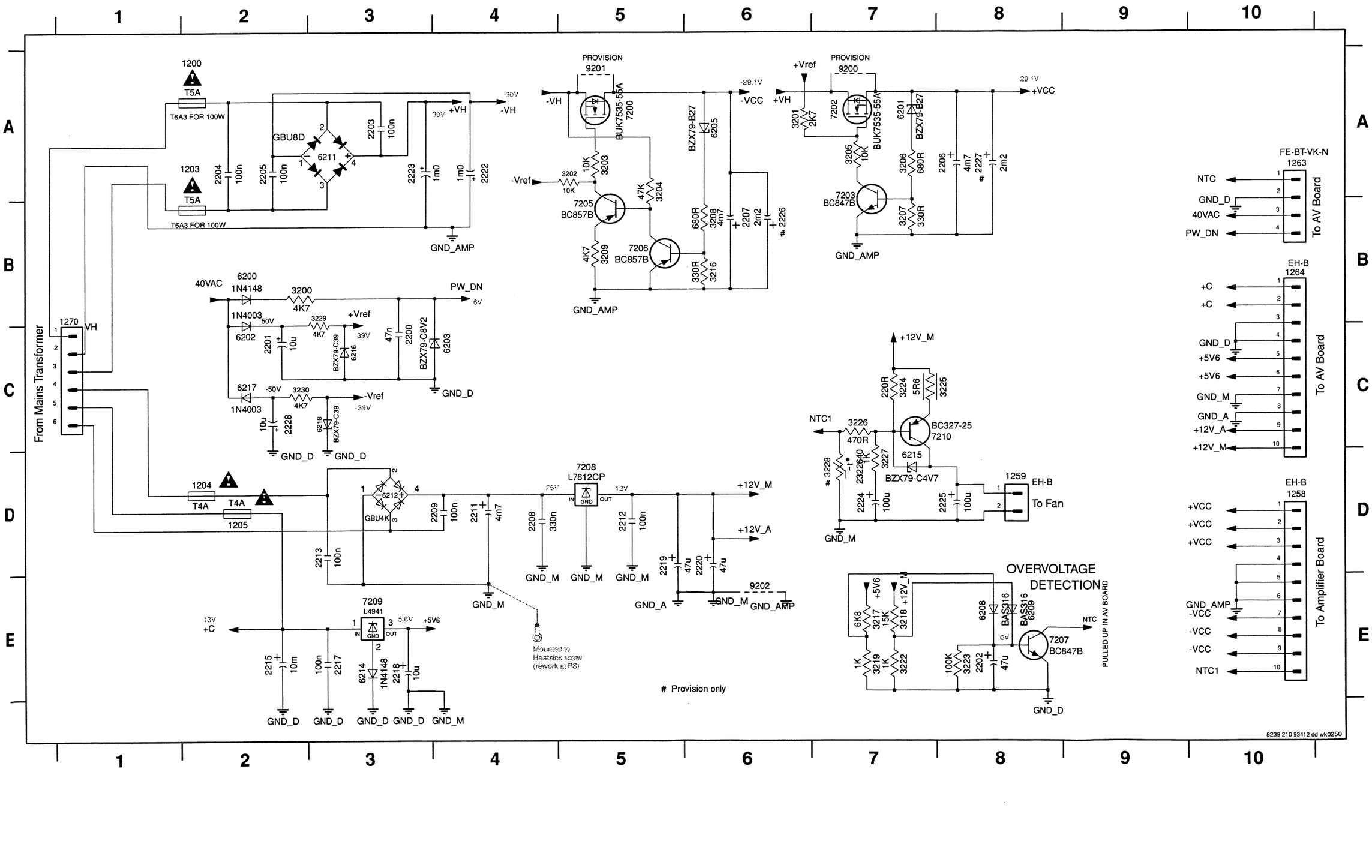

This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram and respective parts list.
93438_01
3139 113 3494 pt8 dd wk0350

2901 D1
2903 C1
2904 D1
2905 B1
2909 B1
2910 B1
2914 C1
3902 B1
3903 C1
3904 C1
3905 D1
3906 B1
3907 D1
3908 A1
3909 B1
3910 A1
3911 C1
3913 E2
3914 E2
3916 B1
3919 E2
3920 D1
6903 D1
6904 D1
6905 B1
6907 E3
6909 E2
6910 E2
6911 D1
6914 D1
6918 E3
6919 E2
6920 E2
6921 D1
7901 B1
7904 B1
7906 E2

8-6

SUPPLY BOARD - CIRCUIT DIAGRAM

1200 A2	1258 D10	1270 B1	2203 A3	2207 B6	2212 D5	2218 E3	2223 A3	2227 A8	3202 A5	3206 A7	3216 B6	3222 E7	3226 C7	3230 C2	6203 C4	6211 A3	6216 C3	7202 A7	7207 E8	9200 A7
1203 A2	1259 D8	2200 C3	2204 A2	2208 D4	2213 D3	2219 D5	2224 D7	2228 C2	3203 A5	3207 B7	3217 E7	3223 E8	3227 D7	6200 B2	6205 A6	6212 D3	6217 C2	7203 A7	7208 D5	9201 A5
1204 D2	1263 A10	2201 C2	2205 A2	2209 D4	2215 E2	2220 D6	2225 D8	3200 B2	3204 A5	3208 B6	3218 E7	3224 C7	3228 D7	6201 A7	6208 E8	6214 E3	6218 C3	7205 B5	7209 E3	9202 E6
1205 D2	1264 B10	2202 E8	2206 A8	2211 D4	2217 E3	2222 A4	2226 B6	3201 A6	3205 A7	3209 B5	3219 E7	3225 C8	3229 B3	6202 C2	6209 E8	6215 D7	7200 A5	7206 B5	7210 C7	



8-6a

SUPPLY BOARD - CIRCUIT DIAGRAM (For pcb layout ... 93418)

1100 D6	1205 D2	1264 B10	2202 E8	2206 A8	2211 D4	2217 E3	2222 A4	2226 B6	3200 B2	3204 A5	3208 B6	3216 B6	3222 E7	3226 C7	3230 C2	3234 B8	6202 C2	6209 E8	6215 D7	7200 A5	7206 B5	7210 C7	9202 E6
1200 A2	1258 D10	1270 B1	2203 A3	2207 B6	2212 D5	2218 E3	2223 A3	2227 A8	3201 A6	3205 A7	3209 B5	3217 E7	3223 E8	3227 D7	3231 C3	3235 B9	6203 C4	6211 A3	6216 C3	7202 A7	7207 E8	7211 B8	
1203 A2	1259 D8	2200 C3	2204 A2	2208 D4	2213 D3	2219 D5	2224 D7	2228 C2	3202 A4	3206 A7	3210 A8	3218 E7	3224 C7	3228 D7	3232 A7	6200 B2	6205 A6	6212 D3	6217 C2	7203 A7	7208 D5	9200 A7	
1204 D2	1263 A10	2201 C2	2205 A2	2209 D4	2215 E2	2220 D6	2225 D8	2229 B9	3203 A5	3207 B7	3211 B6	3219 E7	3225 C8	3229 B3	3233 B8	6201 A7	6208 E8	6214 E3	6218 C3	7205 B5	7209 E3	9201 A5	

1 2 3 4 5 6 7 8 9 10

SUPPLY

100W/37	6A3	6A3	UL
75W/100W/22/21	5A	5A	IEC

1200 1203

1200 T5A
1203 T5A
GBU8D 6211
2204 100n
2205 100n
2203 100n
2223 1m0
1m0 2222
30V +VH
GND_AMP

-VH -30V -VH
9201
BUK7535-55A 7200
10K 3202
10K 3203
47K 3204
7205 BC857B
7206 BC857B
4K7 3209
330R 3216
BZX79-B27 6205
680R 3208
4m7
2207
2m2
2226
3211 47K
-29.1V -VCC
GND_AMP

+Vref
9200
100K # 3232
+VH
3201 2K7
7202
BUK7535-55A
6201 BZX79-B27
3205 10K
7203 BC847B
3206 680R
3207 330R
2206
4m7
2227
2m2
3210 47K
29.1V +VCC
GND_AMP
3233 1K2
3234 10K
100K 3235
50V 4u7 2229
BC857CW 7211

FE-BT-VK-N 1263
NTC
GND_D
40VAC
PW_DN
To AV Board

EH-B 1264
+C
+C
GND_D
+5V6
+5V6
GND_M
GND_A
+12V_A
+12V_M
To AV Board

6200 1N4148
40VAC
3200 4K7
PW_DN 6V
1N4003 50V
6202
3229 4K7
+Vref 39V
2201 10u
BZX79-C39 6216
47n 2200
BZX79-C8V2 6203
GND_D
6217 1N4003
-50V
3230 4K7
3231 10K
10u 2228
6218 BZX79-C39 -39V
GND_D GND_D

1270 VH
From Mains Transformer

+12V_M
220R 3224
8R2 3225
NTC1
3226 470R
2322640 # 3228
1K 3227
BC327-25 7210
6215 BZX79-C4V7
USE NTC IN AMPLIFIER BOARD NOT INSERTED
2224 100u
2225 100u
1259 EH-B
GND_M

1204 T5A
1205 T5A
GBU4K 6212
2209 100n
2211 4m7
26V
7208 L7812CP
12V
+12V_M
+12V_A
1100
9202
2208 330n
2212 100n
2219 47u
2220 47u
2213 100n
GND_M GND_M GND_M GND_A GND_M GND_AMP

i6000	T 5A	250V	IEC
75W/100W	T 4A	250V	IEC

1204 1205

OVERVOLTAGE DETECTION
6K8 3217
+5V6
15K 3218
+12V_M
6208 BAS316
6209 BAS316
NTC
0V
7207 BC847B
1K 3219
1K 3222
100K 3223
2202 47u
PULLED UP IN AV BOARD
GND_D

EH-B 1258
+VCC
+VCC
+VCC
GND_AMP
-VCC
-VCC
-VCC
NTC1
To Amplifier Board

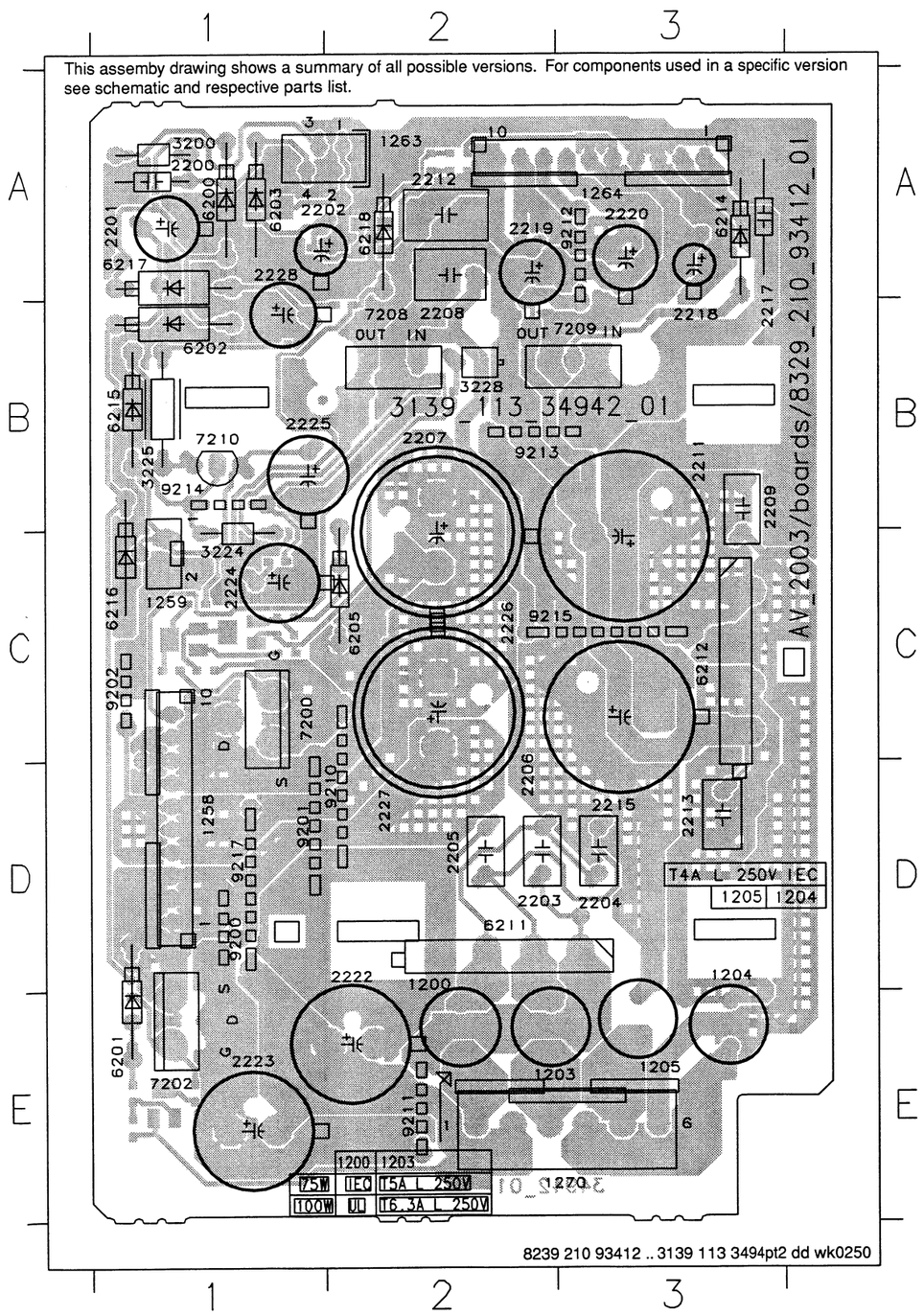
13V +C
7209 L4941
5.6V +5V6
2215 10m
100n 2217
6214 1N4148
2218 10u
GND_D GND_D GND_D GND_D GND_M

Provision only
Note : Some values may varies, see respective parts list for correct value.

8239_210_93418_01...for 3494 pt8 dd wk0350

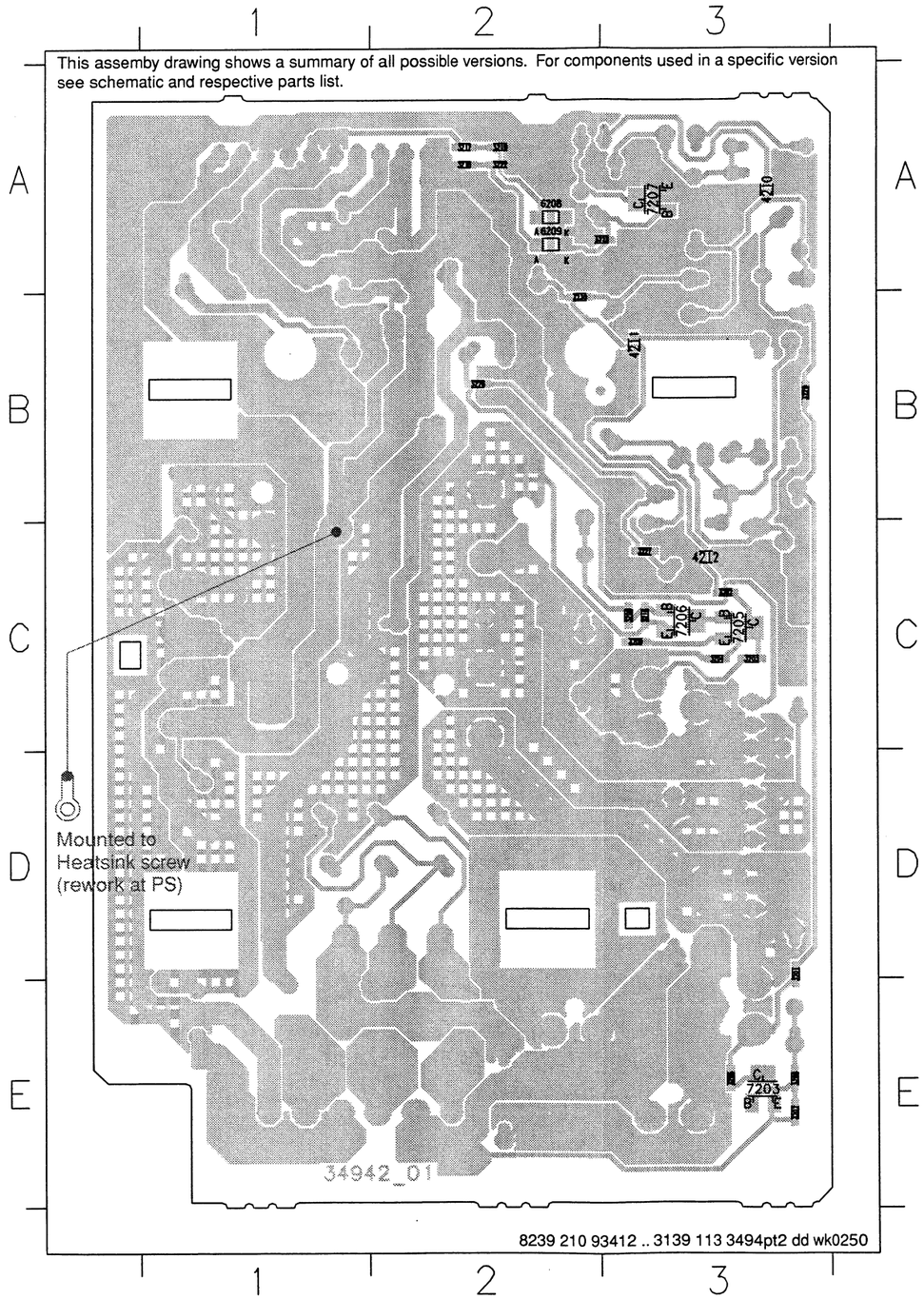
1 2 3 4 5 6 7 8 9 10

SUPPLY BOARD - COMPONENT LAYOUT


This assemby drawing shows a summary of all possible versions. For components used in a specific version see schematic and respective parts list.
3139_113_34942_01
AV_2003/boards/8329_210_93412_01
OUT IN
OUT 7209 IN
T4A L 250V IEC
1205 1204
1200 1203
175W IEC T5A L 250V
100W UL T6.3A L 250V
8239 210 93412 .. 3139 113 3494pt2 dd wk0250

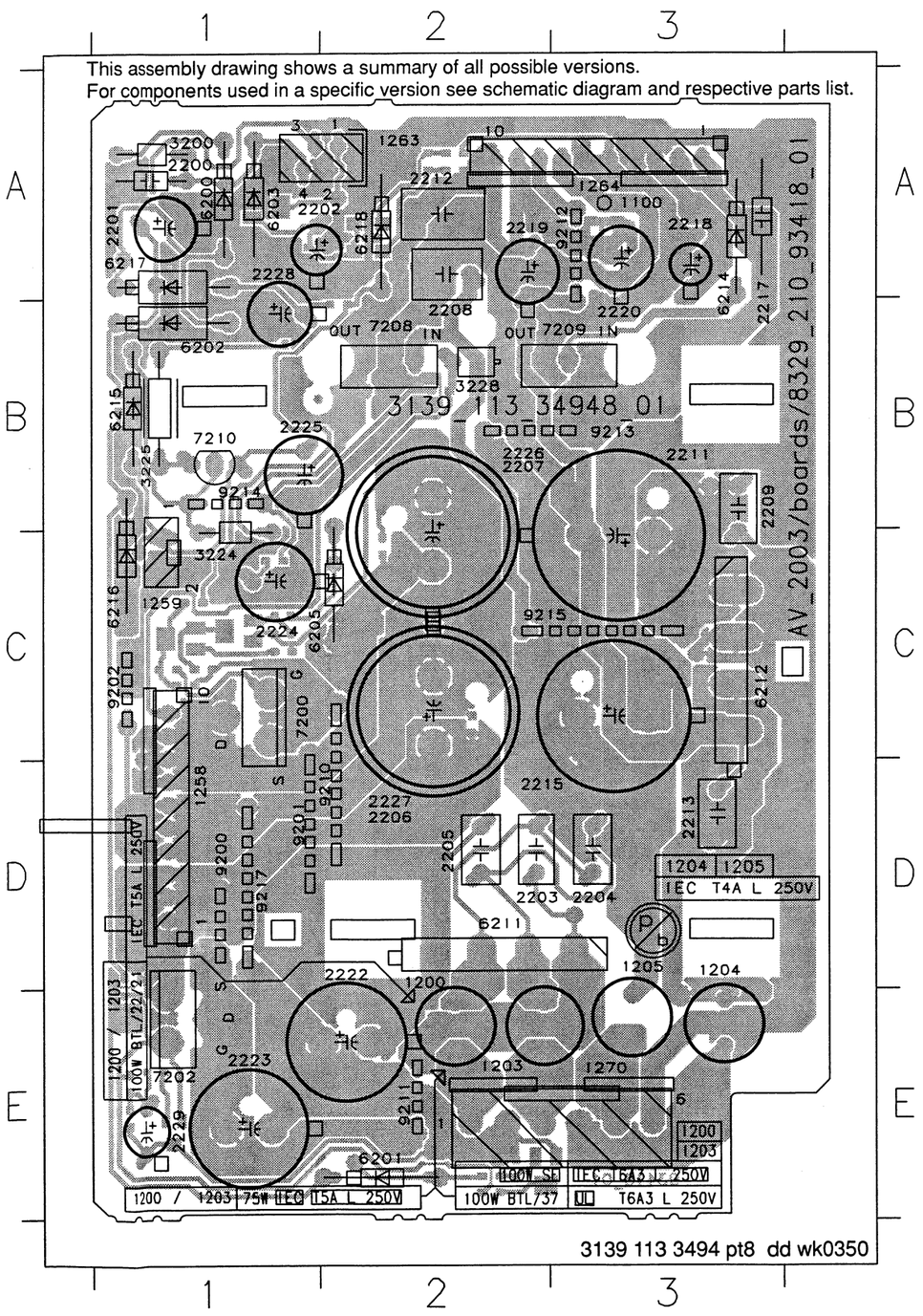
1200 D2
1203 E2
1204 D3
1205 E3
1258 D1
1259 C1
1263 A2
1264 A3
1270 E3
2200 A1
2201 A1
2202 A1
2203 D2
2204 D3
2205 D2
2206 D2
2207 B2
2208 B2
2209 B3
2211 B3
2212 A2
2213 D3
2215 D3
2217 B3
2218 B3
2219 A2
2220 A3
2222 D2
2223 E1
2224 C1
2225 B1
2226 C2
2227 D2
2228 A1
3200 A1
3224 C1
3225 B1
3228 B2
6200 A1
6201 E1
6202 B1
6203 A1
6205 C2
6211 D2
6212 C3
6214 A3
6215 B1
6216 C1
6217 A1
6218 A2
7200 C1
7202 E1
7208 B2
7209 B3
7210 B1
9200 D1
9201 D1
9202 C1
9210 D2
9211 E2
9212 A3
9213 B2
9214 B1
9215 C2
9217 D1

SUPPLY BOARD - CHIP LAYOUT


This assemby drawing shows a summary of all possible versions. For components used in a specific version see schematic and respective parts list.
Mounted to Heatsink screw (rework at PS)
34942_01
8239 210 93412 .. 3139 113 3494pt2 dd wk0250

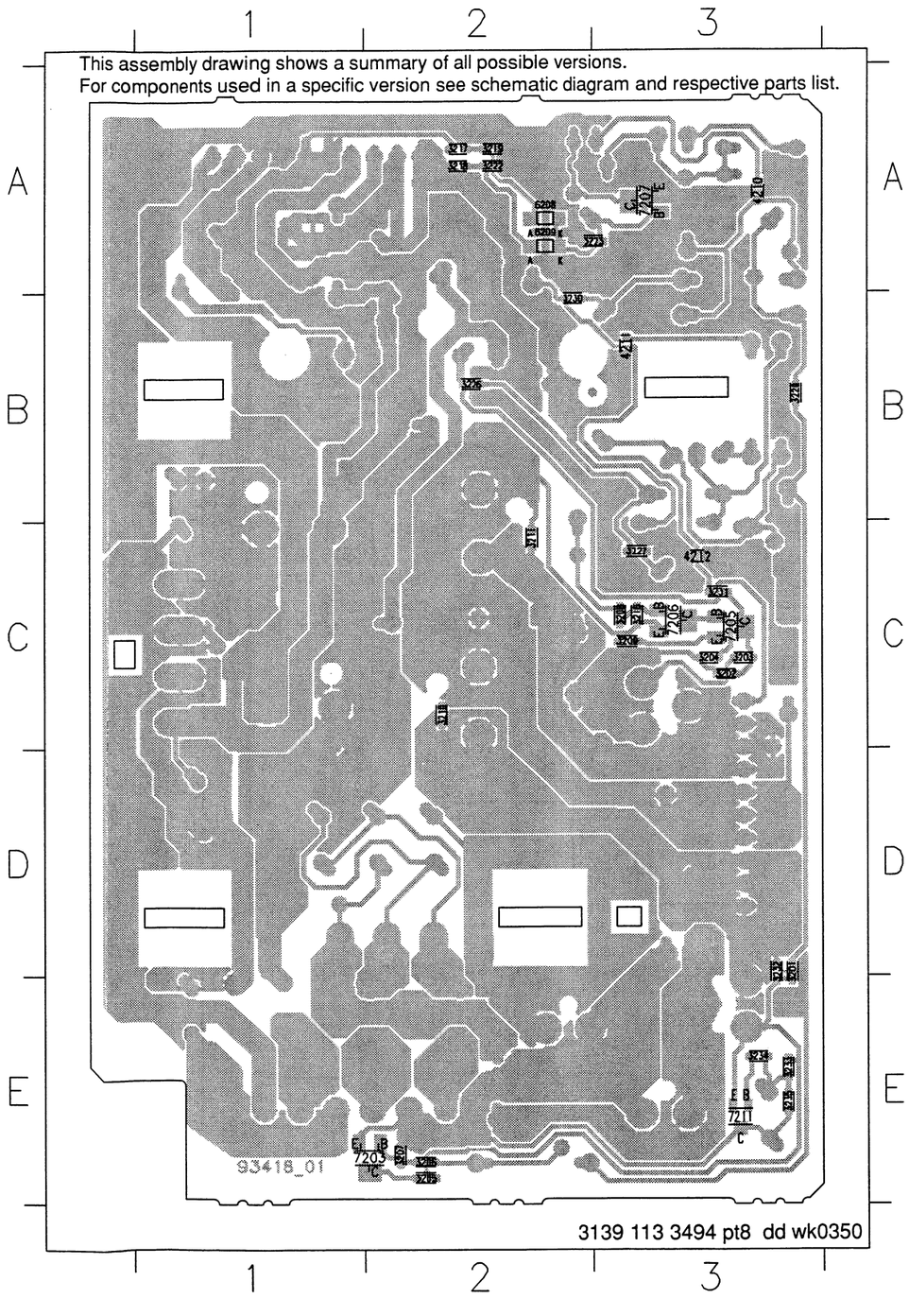
3201 D3
3202 C3
3203 C3
3204 C3
3205 E3
3206 E3
3207 E3
3208 C3
3209 C3
3216 C3
3217 A2
3218 A2
3219 A2
3223 A3
3226 B2
3227 C3
3229 B3
3230 B2
4210 A3
4211 B3
4212 C3
6208 A2
6209 A2
7203 E3
7205 C3
7206 C3
7207 A3

SUPPLY BOARD - COMPONENT LAYOUT (pcb layout ... 93418)



1100 A3
1200 D2
1203 E2
1204 D3
1205 D3
1258 D1
1259 C1
1263 A2
1264 A3
1270 E3
2200 A1
2201 A1
2202 A1
2203 D2
2204 D3
2205 D2
2206 D2
2207 B2
2208 B2
2209 B3
2211 B3
2212 A2
2213 D3
2215 D2
2217 B3
2218 A3
2219 A2
2220 B3
2222 D2
2223 E1
2224 C1
2225 B1
2226 B2
2227 D2
2228 A1
2229 E1
3200 A1
3224 C1
3225 B1
3228 B2
6200 A1
6201 E2
6202 B1
6203 A1
6205 C1
6211 D2
6212 C3
6214 A3
6215 B1
6216 C1
6217 A1
6218 A2
7200 C1
7202 E1
7208 B2
7209 B3
7210 B1
9200 D1
9201 D1
9202 C1
9210 D2
9211 E2
9212 A3
9213 B3
9214 B1
9215 C2
9217 D1

SUPPLY BOARD - CHIP LAYOUT (pcb layout 93418)



3201 D3
3202 C3
3203 C3
3204 C3
3205 E2
3206 E2
3207 E2
3208 C3
3209 C3
3210 C2
3211 C2
3216 C3
3217 A2
3218 A2
3219 A2
3222 A2
3223 A3
3226 B2
3227 C3
3229 B3
3230 B2
3231 C3
3232 D3
3233 E3
3234 E3
3235 E3
4210 A3
4211 B3
4212 C3
6208 A2
6209 A2
7203 E2
7205 C3
7206 C3
7207 A3
7211 E3

8-8

AMPLIFIER BOARD - CLOCK GENERATOR & CONNECTION CIRCUIT

1301: 1 = LEFT (SUBW)
3 = RIGHT (SUR_L)
5 = CENTER (SUR_R)

1302: 1 = LEFT
3 = RIGHT
5 = CENTER

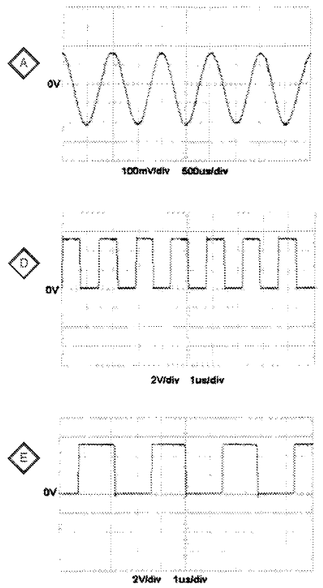
1305 & 1303: 1 = SUBW
3 = SUR_L
5 = SUR_R

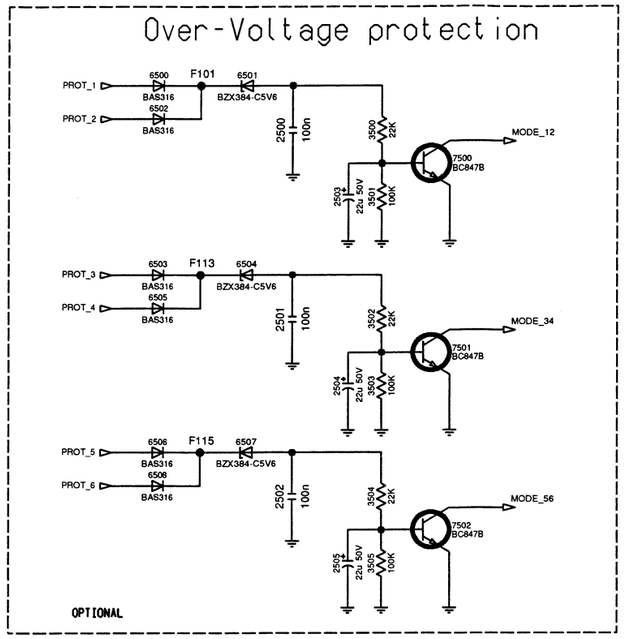
To AV Board

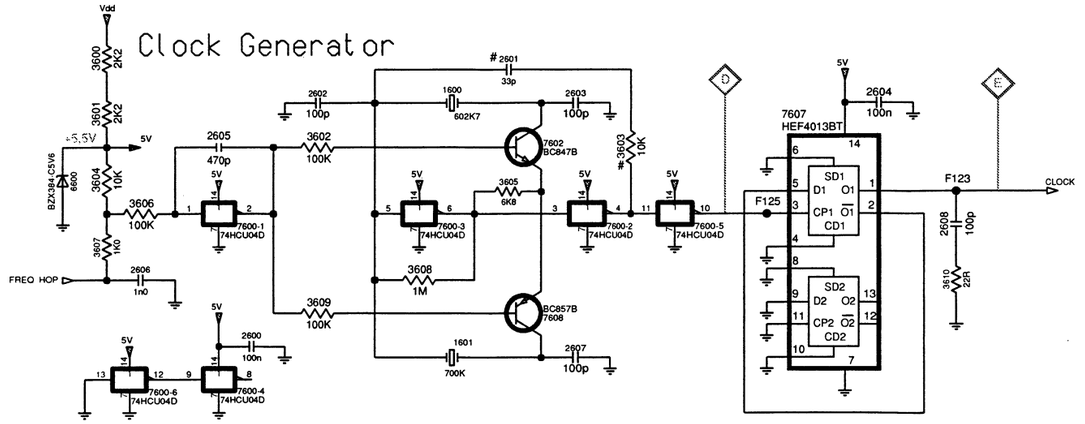
To AV Board

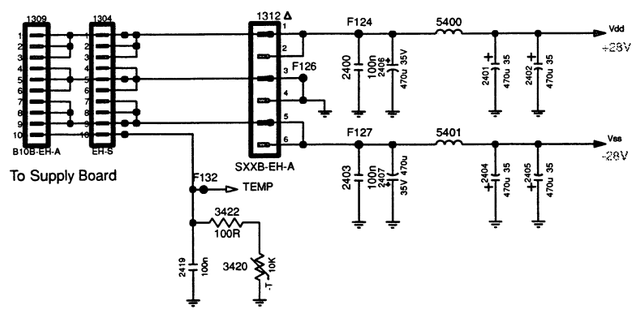
To Supply Board

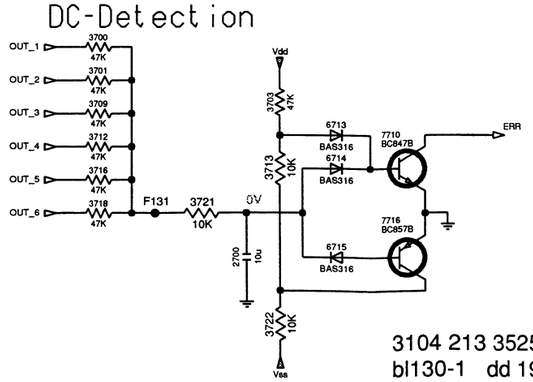
△ Not for 75W version
✱ Not for 100W version
Provision only











1320 RT-01T

1400 SCREENCOVER

F143 2423 100n

3104 213 3525
bl130-1 dd 19-11-02

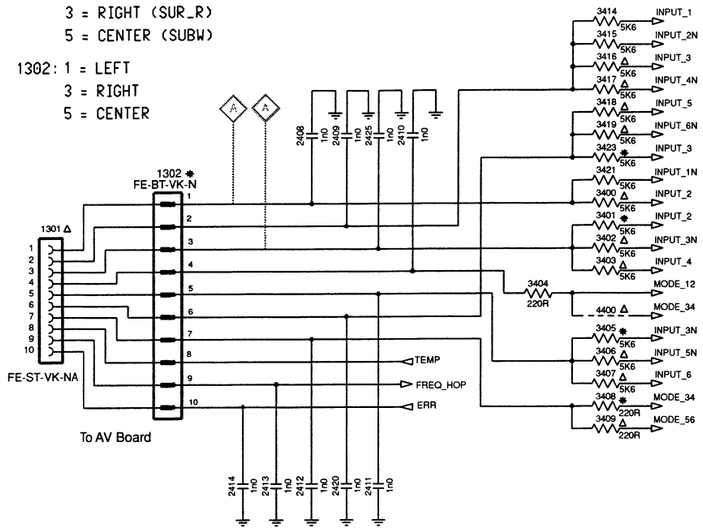
1301 B1	6505 B10
1302 B2	6506 C10
1303 E2	6507 C10
1304 G2	6508 C10
1305 E1	6600 F6
1309 G1	6713 H12
1312 G3	6714 H12
1320 I6	6715 I12
1400 I6	7500 A12
1600 E9	7501 C12
1601 G9	7502 D12
2400 H3	7600-1 F8
2401 H4	7600-2 F10
2402 H5	7600-3 F9
2403 H3	7600-4 G8
2404 H4	7600-6 F11
2405 H5	7600-6 G7
2406 H4	7602 E9
2407 H4	7607 E11
2408 B3	7608 F9
2409 B3	7710 H12
2410 B3	7716 I12
2411 D3	F100 B3
2412 D3	F101 A10
2413 D2	F102 B3
2414 D2	F103 B3
2415 F3	F105 B3
2416 F3	F106 C3
2417 F3	F108 C3
2418 F3	F111 C3
2419 I2	F113 B10
2420 D3	F114 C3
2421 F2	F115 C10
2422 F3	F116 E2
2423 I8	F117 E3
2425 B3	F118 E3
2500 A11	F119 E3
2501 B11	F123 F12
2502 D11	F124 G3
2503 B11	F125 F11
2504 C11	F126 H3
2505 D11	F127 H3
2600 G8	F131 I10
2601 E9	F132 H2
2602 E8	F140 C3
2603 E10	F141 E3
2604 E12	F142 E2
2605 E7	F143 H8
2606 F7	
2607 G10	
2608 F12	
2700 I11	
3400 B5	
3401 B5	
3402 B5	
3403 B5	
3404 C4	
3405 C5	
3406 C5	
3407 C5	
3408 C5	
3409 C5	
3410 E4	
3411 E4	
3412 E4	
3413 E4	
3414 A5	
3415 A5	
3416 A5	
3417 A5	
3418 A5	
3419 B5	
3420 I3	
3421 B5	
3422 I3	
3423 B5	
3424 E4	
3425 E4	
3426 E4	
3500 A11	
3501 B11	
3502 B11	
3503 C11	
3504 D11	
3505 D11	
3600 E7	
3601 E7	
3602 E8	
3603 E10	
3604 F7	
3605 F9	
3606 F7	
3607 F7	
3608 F9	
3609 F8	
3610 F12	
3700 G10	
3701 H10	
3703 H11	
3709 H10	
3712 H10	
3713 H11	
3716 H10	
3718 I10	
3721 I11	
3722 I11	
4400 C5	
5400 G4	
5401 H4	
6500 A10	
6501 A10	
6502 A10	
6503 B10	
6504 B10	

8-8a

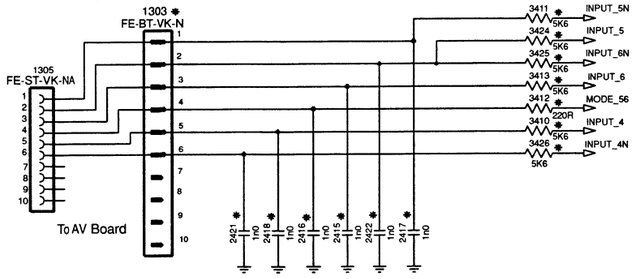
AMPLIFIER BOARD - CLOCK GENERATOR & CONNECTION CIRCUIT (For pcb layout ... 34255)

1301: 1 = LEFT (SUR_L)
3 = RIGHT (SUR_R)
5 = CENTER (SUBW)

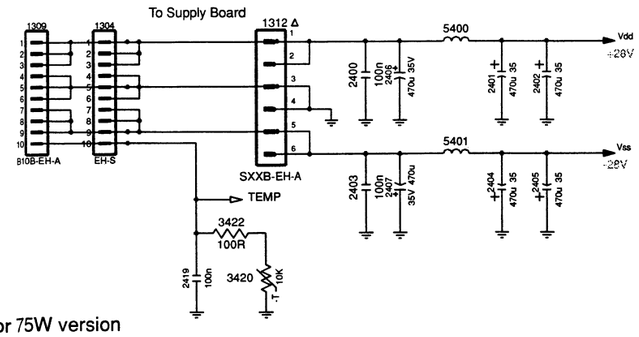
1302: 1 = LEFT
3 = RIGHT
5 = CENTER

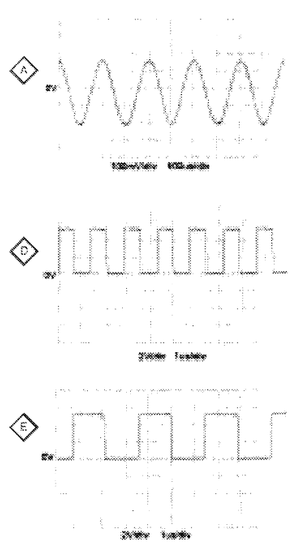


1305 & 1303: 1 = SUR_L
3 = SUR_R
5 = SUBW

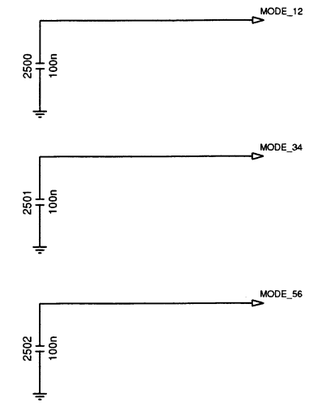


Power Supply



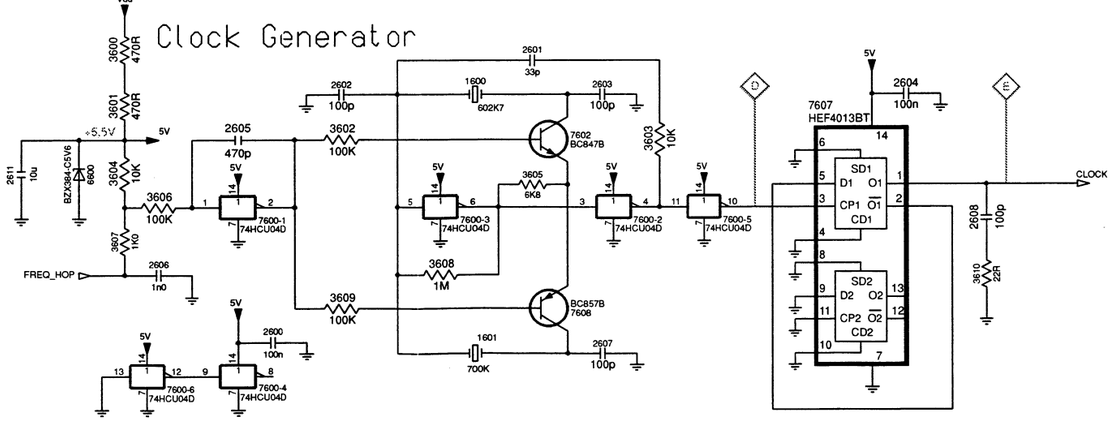


Over-Voltage protection

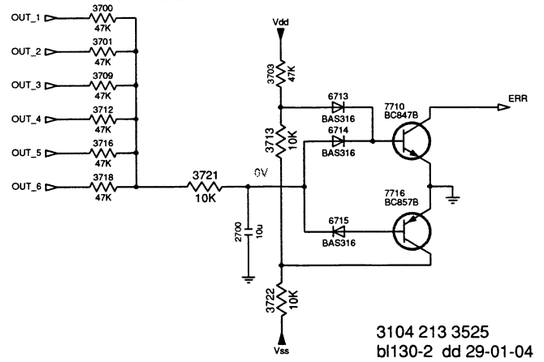


OPTIONAL

Clock Generator



DC-Detection



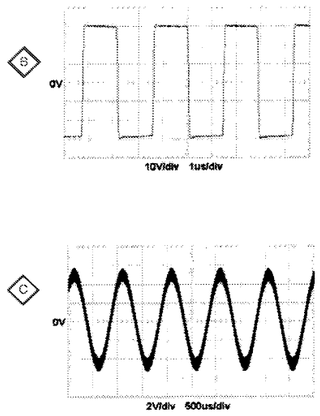
Δ Not for 75W version
✱ Not for 100W version
Provision only

3104 213 3525
bl130-2 dd 29-01-04

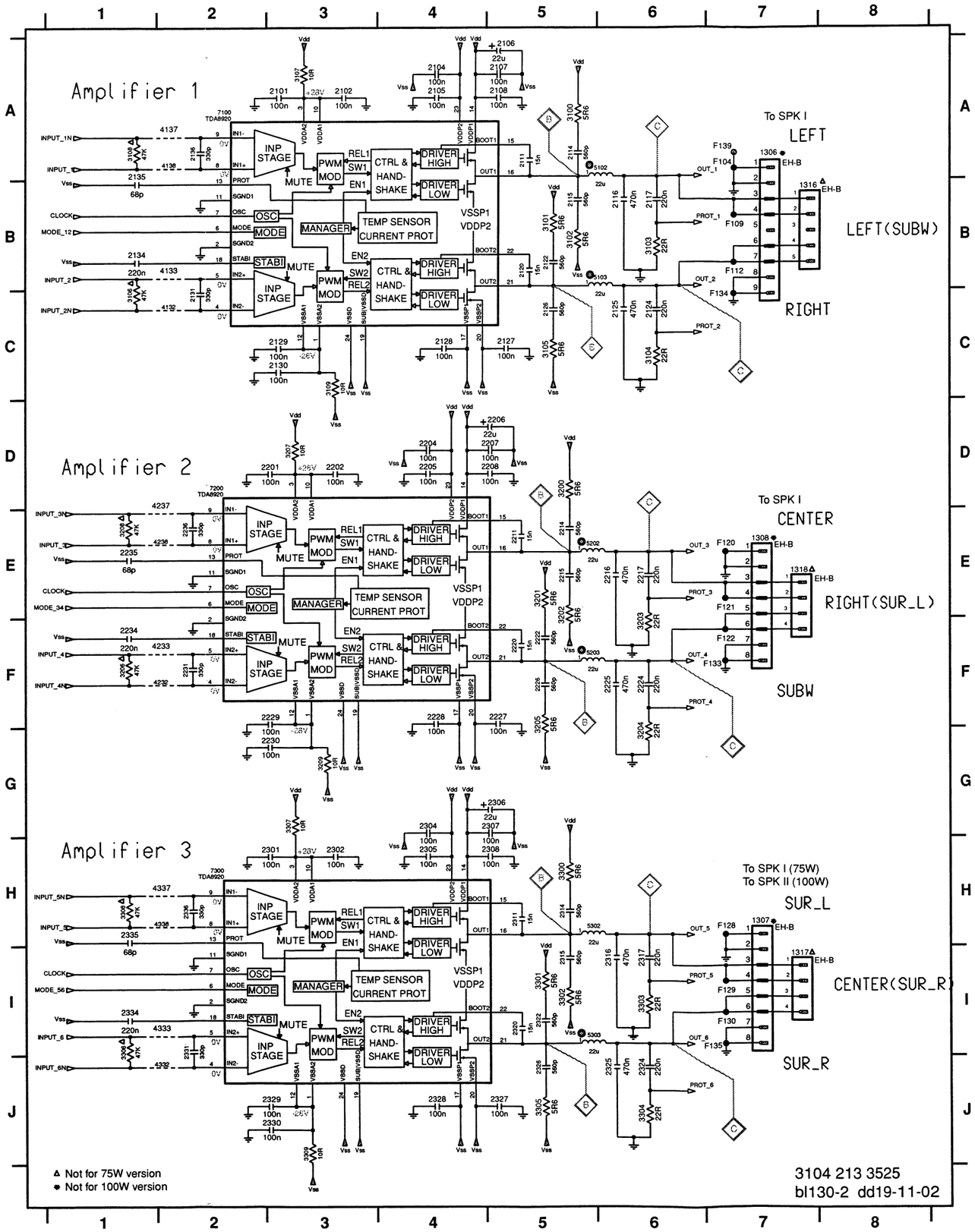
7716 I12

1301 B1
1302 B2
1303 E2
1304 G2
1305 E1
1309 G1
1312 G3
1320 I5
1400 I6
1600 E9
1601 G9
2400 H3
2401 H4
2402 H4
2403 H3
2404 H4
2405 H4
2406 H3
2407 H3
2408 B2
2409 B3
2410 B3
2411 D3
2412 D2
2413 D2
2414 D2
2415 F3
2416 F3
2417 F3
2418 F2
2419 I2
2420 D3
2421 F2
2422 F3
2423 I7
2425 B3
2500 A10
2501 B10
2502 C10
2600 G7
2601 E9
2602 E8
2603 E9
2604 E11
2605 E7
2606 F7
2607 G9
2608 F12
2611 F6
2700 I11
3400 B4
3401 B4
3402 B4
3403 B4
3404 C4
3405 C4
3406 C4
3407 C4
3408 C4
3409 C4
3410 E4
3411 E4
3412 E4
3413 E4
3414 A4
3415 A4
3416 A4
3417 A4
3418 A4
3419 B4
3420 I2
3421 B4
3422 I2
3423 B4
3424 E4
3425 E4
3426 E4
3600 E6
3601 E6
3602 E8
3603 E10
3604 F6
3605 F9
3606 F7
3607 F6
3608 F8
3609 F8
3610 F12
3700 H10
3701 H10
3703 H11
3709 H10
3712 H10
3713 H11
3716 H10
3718 I10
3721 I10
3722 I11
4400 C4
5400 G4
5401 H4
6600 F6
6713 H11
6714 H11
6715 I11
7600-1 F7
7600-2 F10
7600-3 F9
7600-4 G7
7600-5 F10
7600-6 G7
7602 E9
7608 F9
7710 H12

AMPLIFIER BOARD - AMPLIFIER CIRCUIT



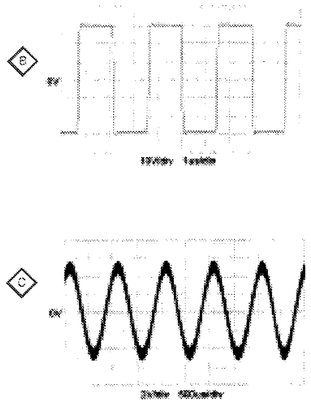
8-9

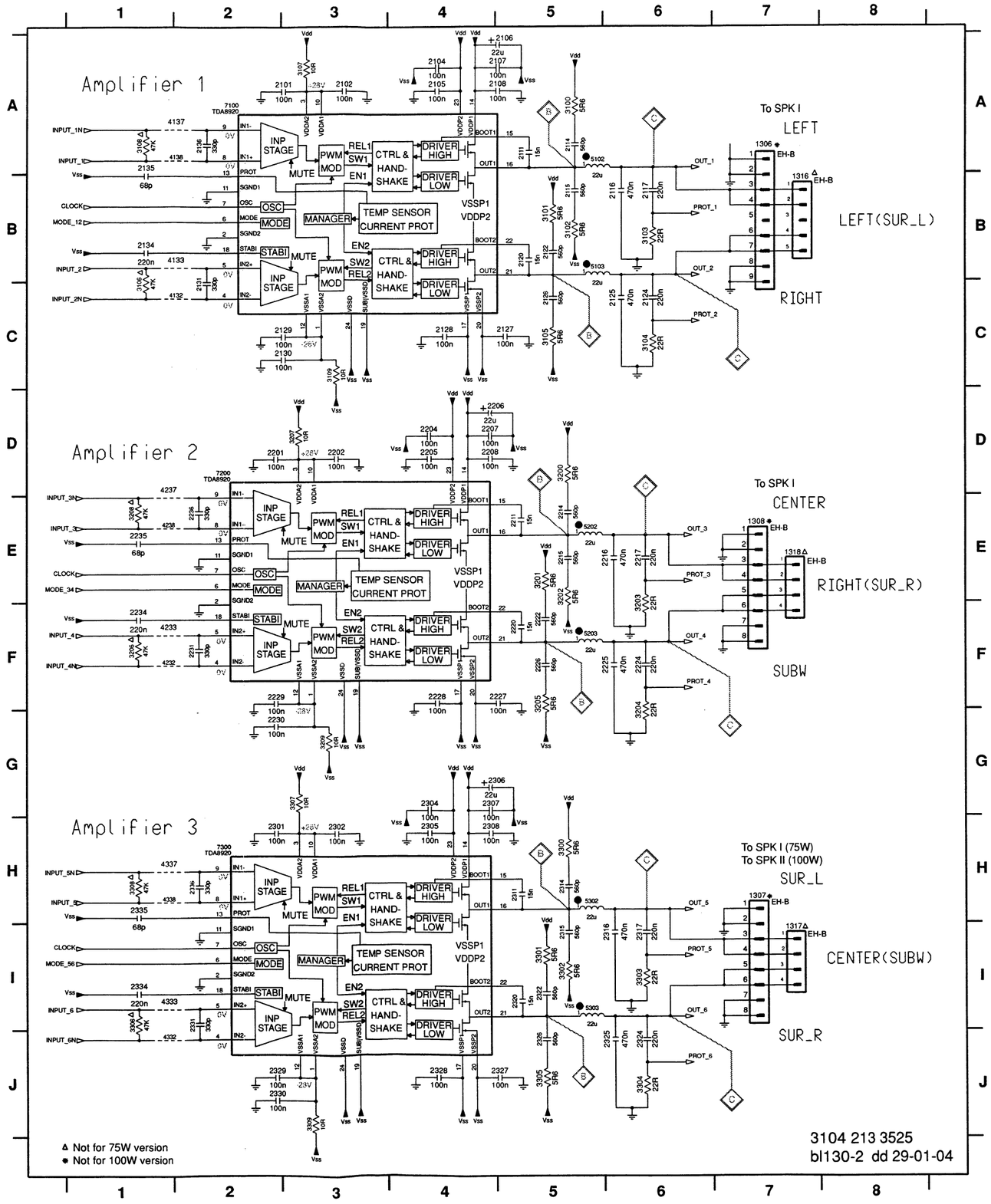


1306 A7 5303 I5
1307 H7 7100 A2
1308 E7 7200 D2
1316 B7 7300 H2
1317 I7 F104 A7
1318 E7 F109 B7
2101 A3 F112 B7
2102 A3 F120 E7
2104 A4 F121 E7
2105 A4 F122 F7
2106 A5 F128 H7
2107 A5 F129 I7
2108 A5 F130 I7
2111 A5 F133 F7
2114 A5 F134 C7
2115 B5 F135 I7
2116 B6 F139 A7
2117 B6
2120 B5
2122 B5
2124 C6
2125 C6
2126 C5
2127 C5
2128 C4
2129 C3
2130 C3
2131 C2
2134 B1
2135 A1
2136 A2
2201 D3
2202 D3
2204 D4
2205 D4
2206 D5
2207 D5
2208 D5
2211 E5
2214 E5
2215 E5
2216 E6
2217 E6
2220 F5
2222 F5
2224 F6
2225 F6
2226 F5
2227 F5
2228 F4
2229 F3
2230 G3
2231 F2
2234 F1
2235 E1
2236 E2
2301 H3
2302 H3
2304 G4
2305 H4
2306 G5
2307 G5
2308 H5
2311 H5
2314 H5
2315 I5
2316 I6
2317 I6
2320 I5
2322 I5
2324 J6
2325 J6
2326 J5
2327 J5
2328 J4
2329 J3
2330 J3
2331 I2
2334 I1
2335 H1
2336 H2
3100 A5
3101 B5
3102 B5
3103 B6
3104 C6
3105 C5
3106 C1
3107 A3
3108 A1
3109 C3
3200 D5
3201 E5
3202 E5
3203 F6
3204 G6
3205 F5
3206 F1
3207 D3
3208 E1
3209 G3
3300 H5
3301 I5
3302 I5
3303 I6
3304 J6
3305 J5
3306 I1
3307 G3
3308 H1
3309 J3
4132 C2
4133 B2
4137 A2
4138 A2
4232 F2
4233 F2
4237 D2
4238 E2
4332 J2
4333 I2
4337 H2
4338 H2
5102 A6
5103 B6
5202 E5
5203 F5
5302 H5

8-9a

AMPLIFIER BOARD - AMPLIFIER CIRCUIT (For pcb layout ... 34255)





1306 A7 5302 H5
1307 H7 5303 I5
1308 E7
1316 B7
1317 I7
1318 E7
2101 A3
2102 A3
2104 A4
2105 A4
2106 A5
2107 A5
2108 A5
2111 A5
2114 A5
2115 B5
2116 B6
2117 B6
2120 B5
2122 B5
2124 C6
2125 C6
2126 C5
2127 C5
2128 C4
2129 C3
2130 C3
2131 C2
2134 B1
2135 A1
2136 A2
2201 D2
2202 D3
2204 D4
2205 D4
2206 D5
2207 D4
2208 D4
2211 E5
2214 E5
2215 E5
2216 E6
2217 E6
2220 F5
2222 F5
2224 F6
2225 F6
2226 F5
2227 F5
2228 F4
2229 F2
2230 G2
2231 F2
2234 F1
2235 E1
2236 E2
2301 H2
2302 H3
2304 G4
2305 H4
2306 G5
2307 G4
2308 H4
2311 H5
2314 H5
2315 I5
2316 I6
2317 I6
2320 I5
2322 I5
2324 J6
2325 J6
2326 J5
2327 J5
2328 J4
2329 J2
2330 J2
2331 I2
2334 I1
2335 H1
2336 H2
3100 A5
3101 B5
3102 B5
3103 B6
3104 C6
3105 C5
3106 C1
3107 A3
3108 A1
3109 C3
3200 D5
3201 E5
3202 E5
3203 F6
3204 G6
3205 F5
3206 F1
3207 D3
3208 E1
3209 G3
3300 H5
3301 I5
3302 I5
3303 I6
3304 J6
3305 J5
3306 I1
3307 G3
3308 H1
3309 J3
4132 C2
4133 B2
4137 A2
4138 A2
4232 F1
4233 F1
4237 D1
4238 E1
4332 J1
4333 I1
4337 H1
4338 H1
5102 A5
5103 B5
5202 E5
5203 F5

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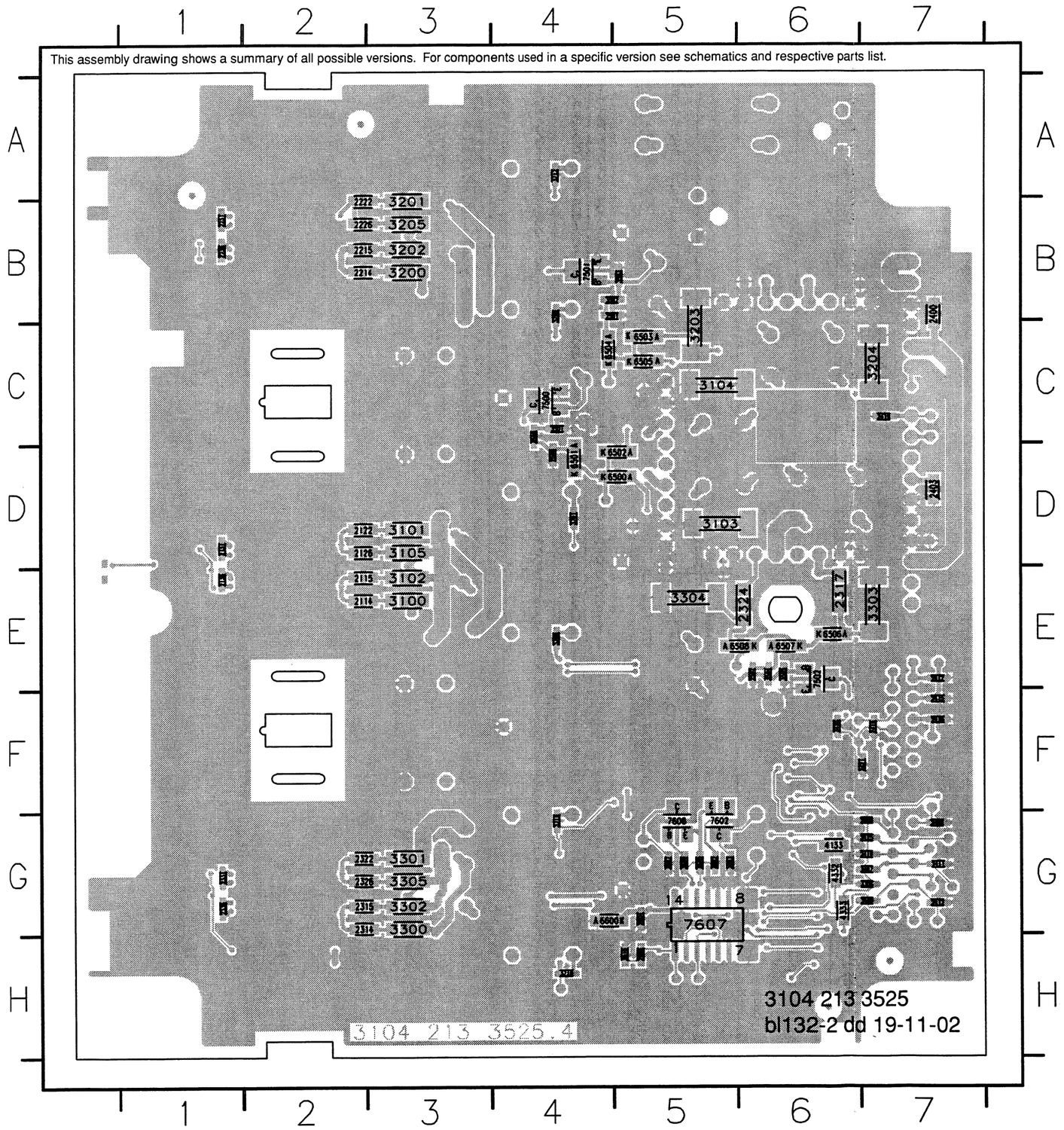
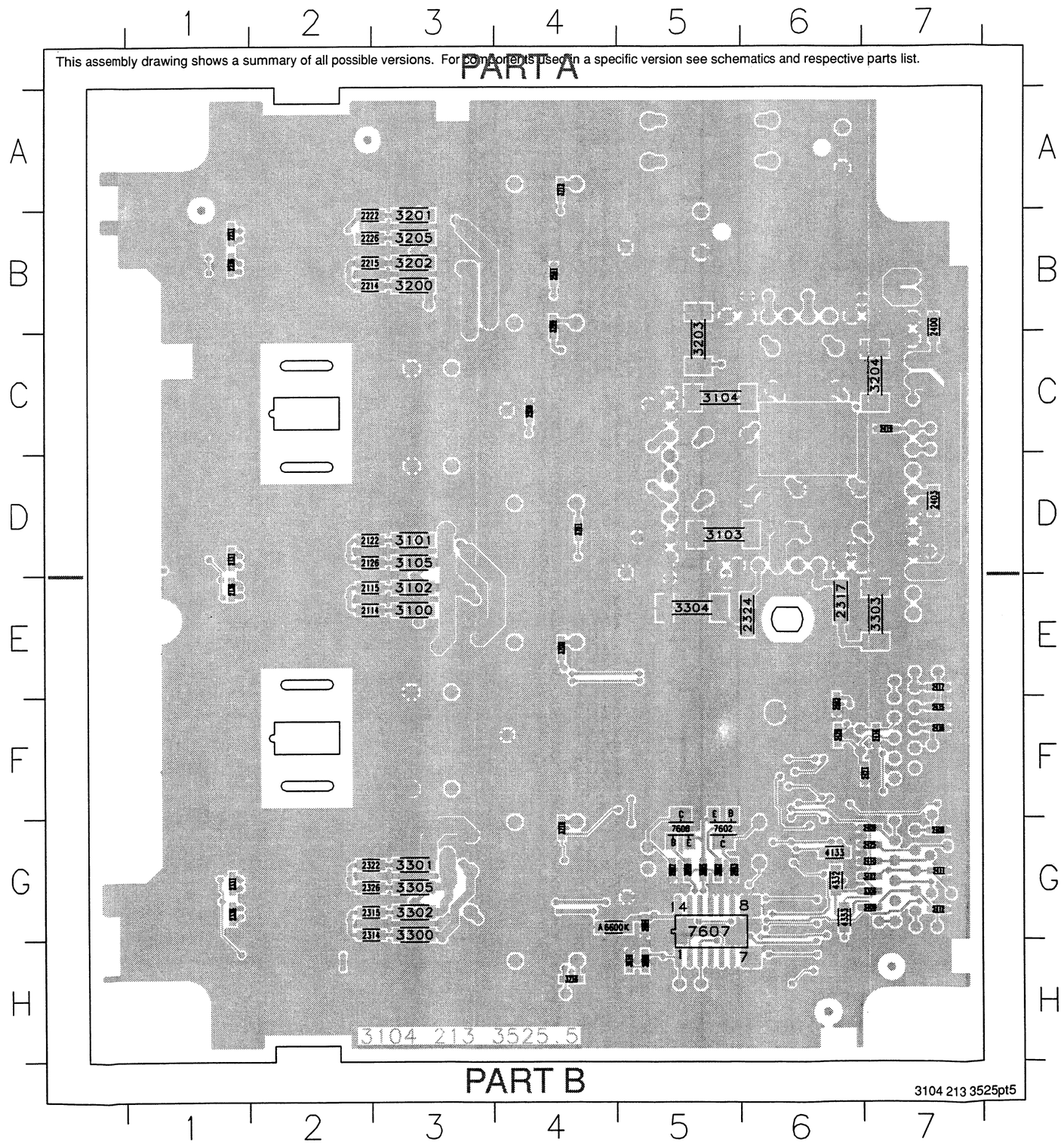
AMPLIFIER BOARD - CHIP VIEW



2114	E2	3610	H5
2115	E2	3700	E4
2122	D2	3701	D4
2126	D2	3709	B4
2131	D1	3712	A4
2136	E1	3716	H4
2214	B2	3718	G4
2215	B2	4133	G6
2222	B2	4333	G6
2226	B2	6500	D5
2231	B1	6501	D4
2236	B1	6502	D5
2314	G2	6503	C5
2315	G2	6504	C4
2317	E6	6505	C5
2322	G2	6506	E6
2324	E6	6507	E6
2326	G2	6508	E6
2331	G1	6600	G4
2332	G6	7500	C4
2336	G1	7501	B4
2400	B7	7502	E6
2403	D7	7602	G5
2408	G7	7607	G5
2409	G7	7608	G5
2410	G7		
2411	G7		
2412	G7		
2415	F7		
2416	F7		
2417	E7		
2418	F7		
2419	C7		
2421	F7		
2425	G7		
2500	D4		
2501	B5		
2502	E6		
2603	G5		
2604	G5		
2607	G5		
2608	H5		
3100	E3		
3101	D3		
3102	E3		
3103	D5		
3104	C5		
3105	D3		
3200	B3		
3201	B3		
3202	B3		
3203	C5		
3204	C7		
3205	B3		
3300	G3		
3301	G3		
3302	G3		
3303	E7		
3304	E5		
3305	G3		
3306	G7		
3407	G7		
3409	G7		
3426	F6		
3500	C4		
3501	C4		
3502	B5		
3503	B5		
3504	E6		
3505	E6		
3602	G5		
3605	G5		
3609	G5		

8-10a

\MPLIFIER BOARD - CHIP VIEW (pcb layout ... 35255)



3104 213 3525pt5

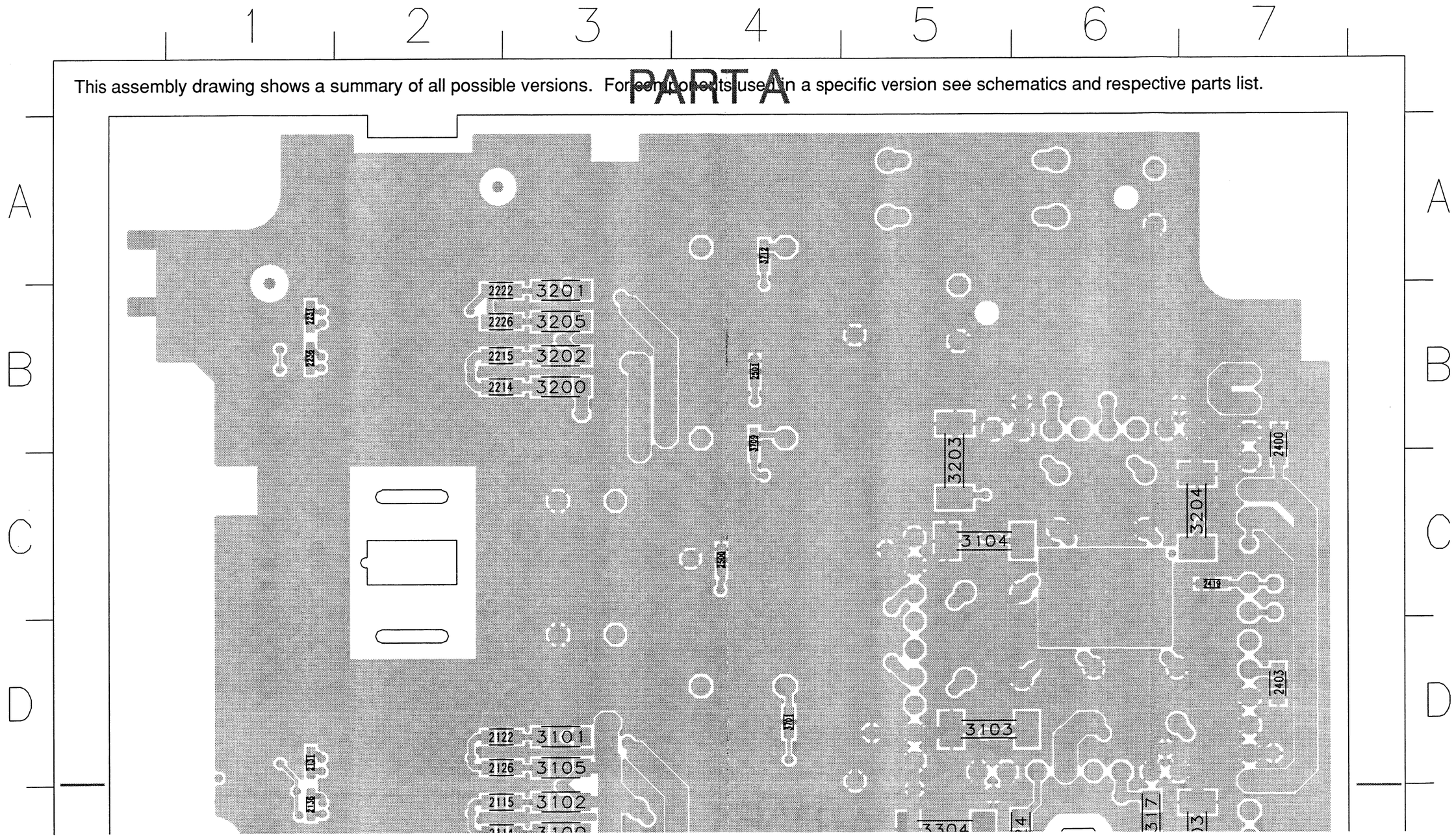
2114	E2	4332	G6
2115	E2	4333	G6
2122	D2	6600	G4
2126	D2	7602	G5
2131	D1	7607	G5
2136	E1	7608	G5
2214	B2	F100	F7
2215	B2	F102	G7
2222	B2	F103	G7
2226	B2	F104	E5
2231	B1	F105	G7
2236	B1	F106	G7
2314	G2	F108	G7
2315	G2	F109	D5
2317	E6	F111	G7
2322	G2	F112	C5
2324	E6	F114	G7
2326	G2	F116	F7
2331	G1	F117	E7
2336	G1	F118	F6
2400	B7	F119	E7
2403	D7	F120	B6
2408	G7	F121	B6
2409	G7	F122	B6
2410	G7	F123	H5
2411	G7	F124	C7
2412	G7	F125	H5
2415	F7	F126	D7
2416	F7	F127	C7
2417	E7	F128	D6
2418	F7	F129	E6
2419	C7	F130	D6
2421	F7	F131	H4
2425	G7	F132	C7
2500	C4	F133	B7
2501	B4	F134	C5
2502	F6	F135	E5
2603	G5	F139	D5
2604	G5	F140	G7
2607	G5	F141	E7
2608	H5	F142	F6
3100	E3	F143	C6
3101	D3		
3102	E3		
3103	D5		
3104	C5		
3105	D3		
3200	B3		
3201	B3		
3202	B3		
3203	C5		
3204	C7		
3205	B3		
3300	G3		
3301	G3		
3302	G3		
3303	E7		
3304	E5		
3305	G3		
3306	G7		
3407	G7		
3409	G7		
3426	F6		
3602	G5		
3605	G5		
3609	G5		
3610	H5		
3700	E4		
3701	D4		
3709	B4		
3712	A4		
3716	H4		
3718	G4		
4133	G6		

8-10b

AMPLIFIER BOARD - CHIP VIEW (pcb layout ... 35255) PART A

This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematics and respective parts list.

PART A



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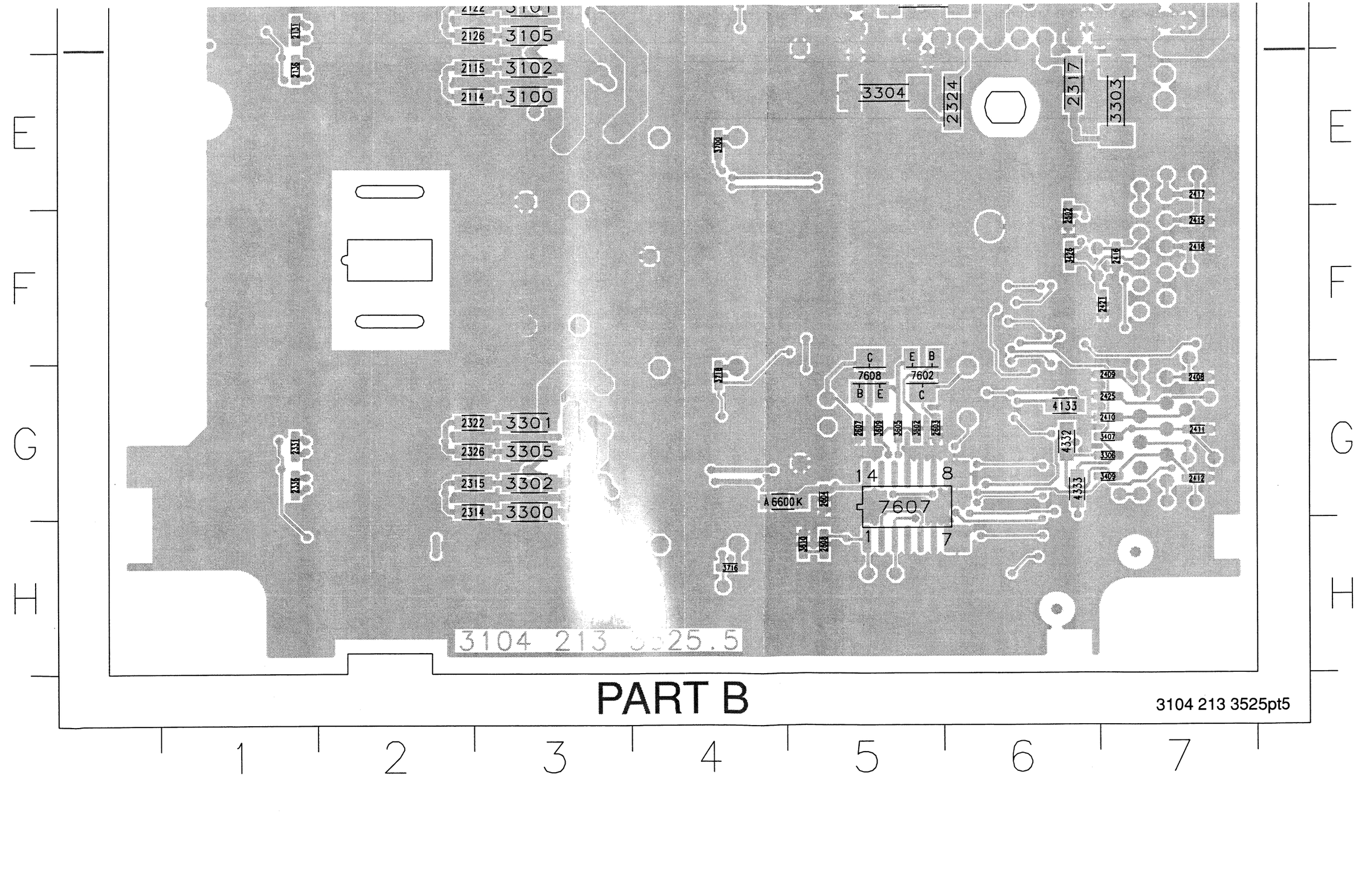
AMPLIFIER BOARD - CHIP VIEW (pcb layout ... 35255) PART B



AMPLIFIER BOARD - COMPONENT LAYOUT

1301	G1	2406	A2	5302	H4
1302	G1	2407	B3	5303	G4
1303	F1	2413	G1	5400	A3
1304	D1	2414	G1	5401	A3
1305	F1	2420	H1	6713	F3
1306	D3	2422	E1	6714	F3
1307	D2	2423	C2	6715	F3
1308	B2	2503	C4	7100	D6
1309	D1	2504	B3	7200	B6
1312	B1	2505	E3	7300	G6
1316	D3	2600	H3	7600	G3
1317	D2	2601	G3	7710	F3
1318	B2	2602	G3	7716	F3
1320	F2	2605	G3		
1400	D4	2606	G3		
1600	G2	2700	F3		
1601	G3	3106	G2		
2101	D7	3107	D6		
2102	E7	3108	F2		
2104	D5	3109	D6		
2105	D5	3206	F1		
2106	D5	3207	A6		
2107	E5	3208	G2		
2108	E5	3209	A6		
2111	E5	3307	G6		
2116	D3	3308	C2		
2117	D3	3309	G6		
2120	D5	3400	F1		
2124	C3	3401	G1		
2125	C3	3402	G1		
2127	D5	3403	F1		
2128	E5	3404	G1		
2129	E6	3405	G1		
2130	D7	3406	G1		
2134	E5	3408	G1		
2135	E6	3410	F1		
2201	B7	3411	F1		
2202	B7	3412	F1		
2204	B5	3413	F1		
2205	A5	3414	G1		
2206	B5	3415	G1		
2207	B5	3416	F1		
2208	B5	3417	F1		
2211	B5	3418	G1		
2216	C2	3419	G1		
2217	C3	3420	F7		
2220	B5	3421	F2		
2224	C1	3422	C1		
2225	C2	3423	C1		
2227	B5	3424	F1		
2228	B5	3425	F1		
2229	B6	3600	G3		
2230	A7	3601	G3		
2234	B5	3603	G3		
2235	B6	3604	G3		
2301	G7	3606	G3		
2302	G7	3607	G3		
2304	G5	3608	G3		
2305	G5	3703	F3		
2306	G5	3713	F3		
2307	G5	3721	F3		
2308	H5	3722	F3		
2311	G5	4132	G2		
2316	D2	4137	F2		
2320	G5	4138	F2		
2325	D2	4232	F2		
2327	G5	4233	F2		
2328	G5	4237	G2		
2329	H6	4238	F2		
2330	G7	4337	G2		
2334	G5	4338	G2		
2335	H6	4400	G2		
2401	C5	5102	E4		
2402	E5	5103	D4		
2404	D5	5202	B4		
2405	F5	5203	A4		

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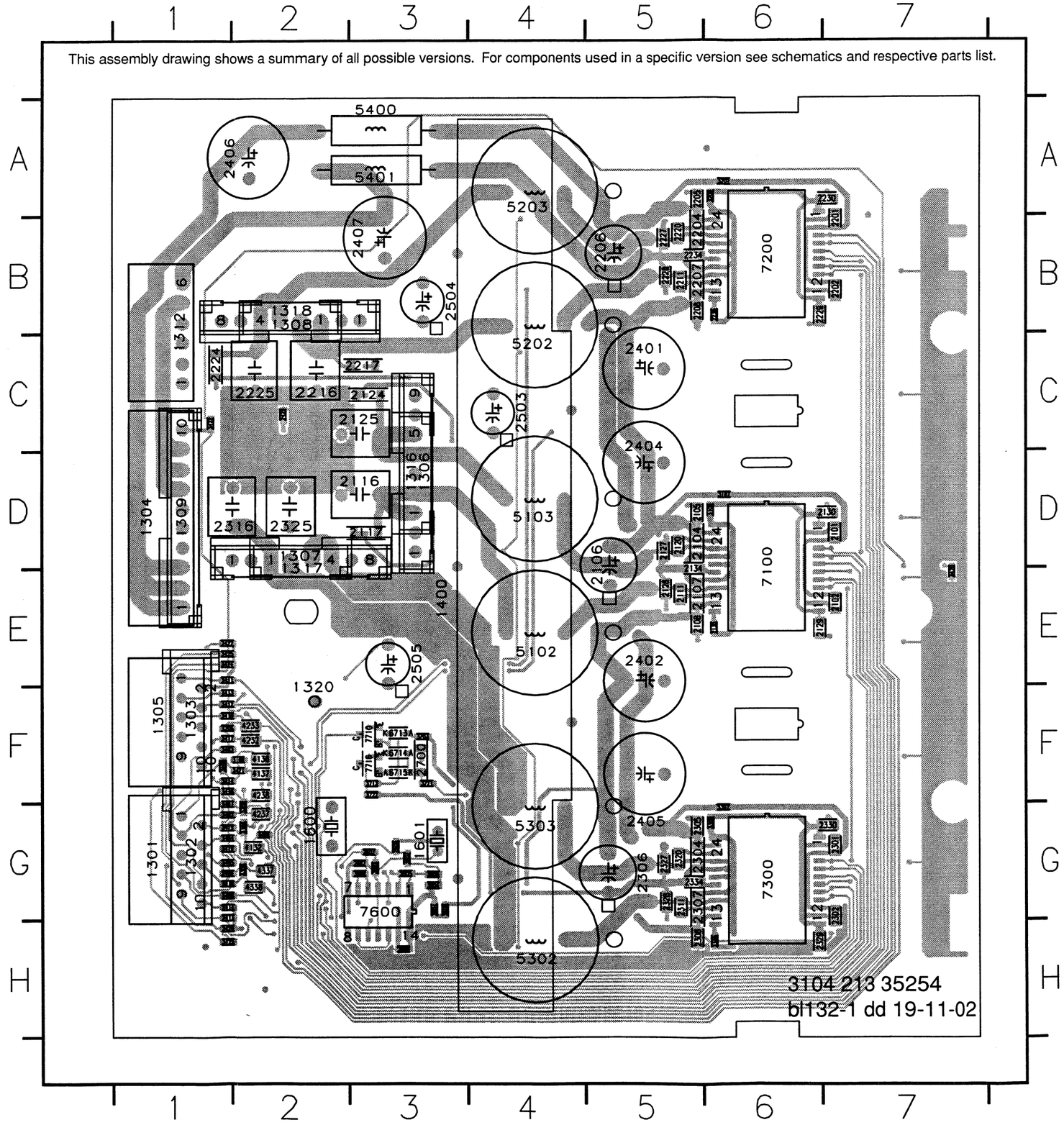
This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematics and respective parts list.



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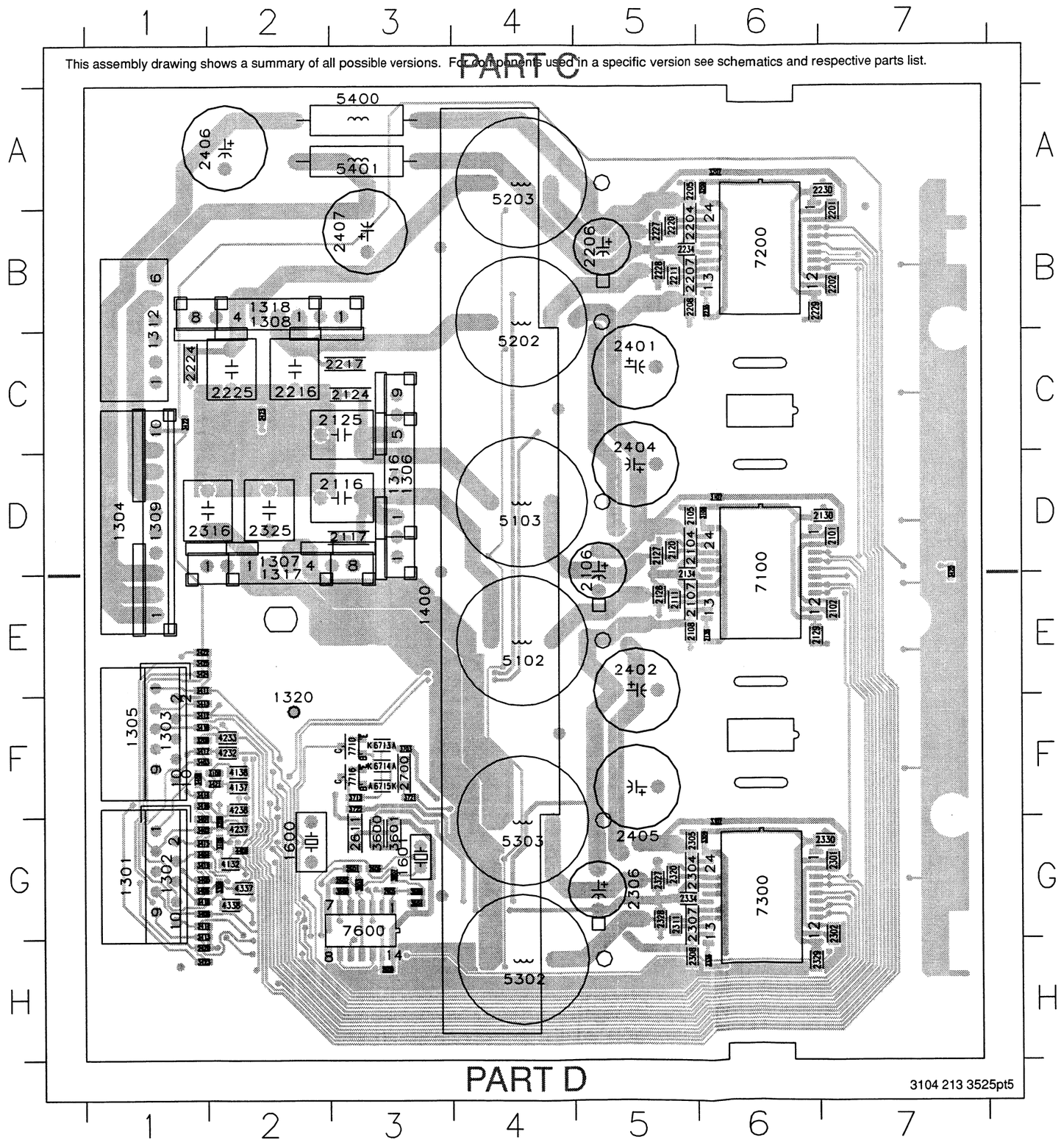
AMPLIFIER BOARD - COMPONENT LAYOUT (pcb layout ... 35255)



1301	G1	2404	D5	5202	B4
1302	G1	2405	F5	5203	A4
1303	F1	2406	A2	5302	H4
1304	D1	2407	B3	5303	G4
1305	F1	2413	G1	5400	A3
1306	D3	2414	G1	5401	A3
1307	D2	2420	H1	6713	F3
1308	B2	2422	E1	6714	F3
1309	D1	2423	C2	6715	F3
1312	B1	2600	H3	7100	D6
1316	D3	2601	G3	7200	B6
1317	D2	2602	G3	7300	G6
1318	B2	2605	G3	7600	G3
1320	F2	2606	G3	7710	F3
1400	D4	2611	G3	7716	F3
1600	G2	2700	F3		
1601	G3	3106	G2		
2101	D7	3107	D6		
2102	E7	3108	F2		
2104	D5	3109	D6		
2105	D5	3206	F1		
2106	D5	3207	A6		
2107	E5	3208	G2		
2108	E5	3209	A6		
2111	E5	3307	G6		
2116	D3	3308	G2		
2117	D3	3309	G6		
2120	D5	3400	F1		
2124	C3	3401	G1		
2125	C3	3402	G1		
2127	D5	3403	F1		
2128	E5	3404	G1		
2129	E6	3405	G1		
2130	D7	3406	G1		
2134	E5	3408	G1		
2135	E6	3410	F1		
2201	B7	3411	E1		
2202	B7	3412	F1		
2204	B5	3413	F1		
2205	A5	3414	F1		
2206	B5	3415	G1		
2207	B5	3416	F1		
2208	B5	3417	F1		
2211	B5	3418	G1		
2216	C2	3419	G1		
2217	C3	3420	D7		
2220	B5	3421	F2		
2224	C1	3422	C1		
2225	C2	3423	H1		
2227	B5	3424	E1		
2228	B5	3425	E1		
2229	B6	3600	G3		
2230	A7	3601	G3		
2234	B5	3603	G3		
2235	B6	3604	G3		
2301	G7	3606	G3		
2302	G7	3607	G3		
2304	G5	3608	G3		
2305	G5	3703	F3		
2306	G5	3713	F3		
2307	G5	3721	F3		
2308	H5	3722	F3		
2311	G5	4132	G2		
2316	D2	4137	F2		
2320	G5	4138	F2		
2325	D2	4232	F2		
2327	G5	4233	F2		
2328	G5	4237	G2		
2329	H6	4238	F2		
2330	G7	4337	G2		
2334	G5	4338	G2		
2335	H6	4400	G2		
2401	C5	5102	E4		
2402	E5	5103	D4		

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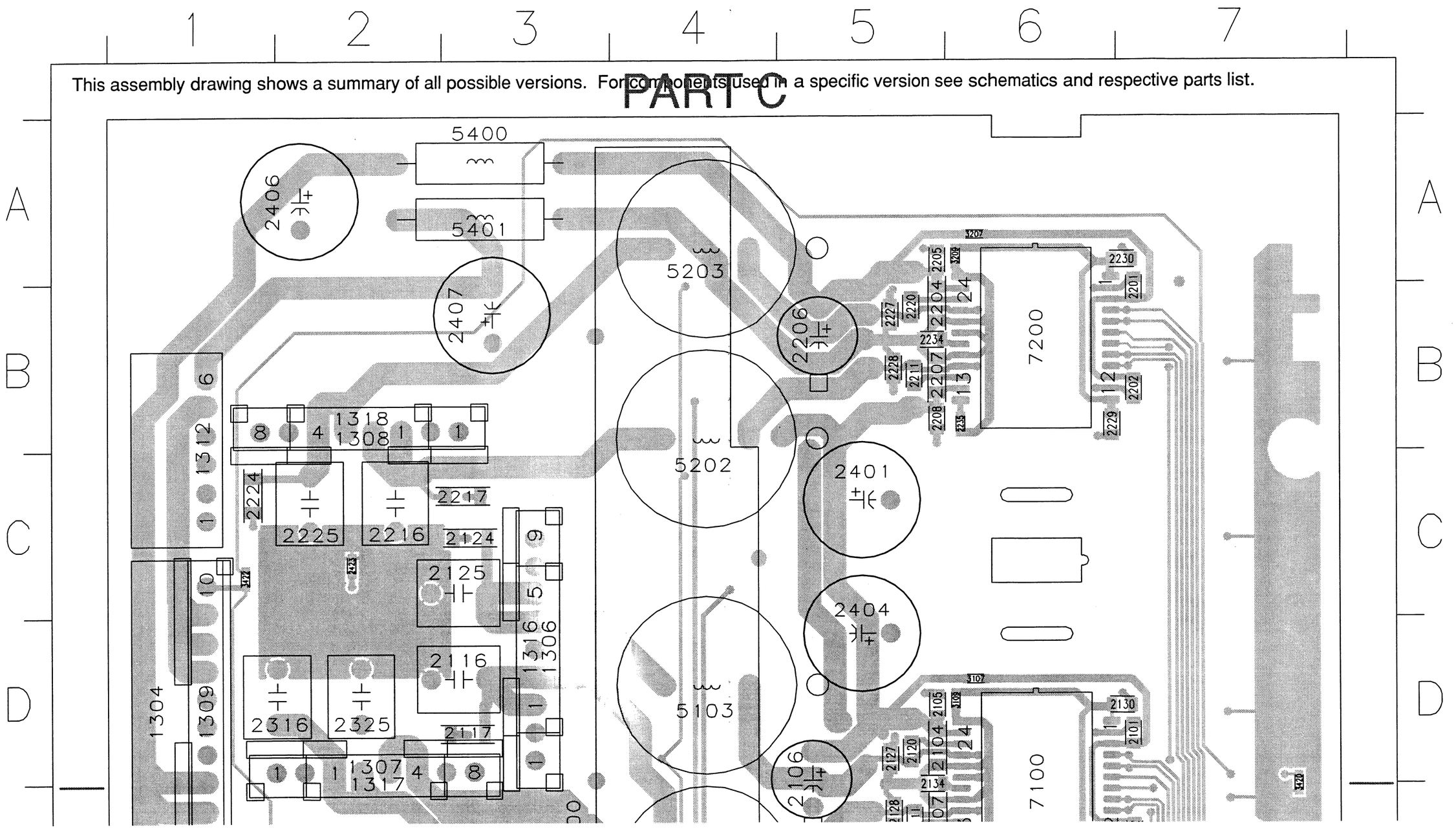
AMPLIFIER BOARD - COMPONENT LAYOUT (pcb layout ... 35255) PART C

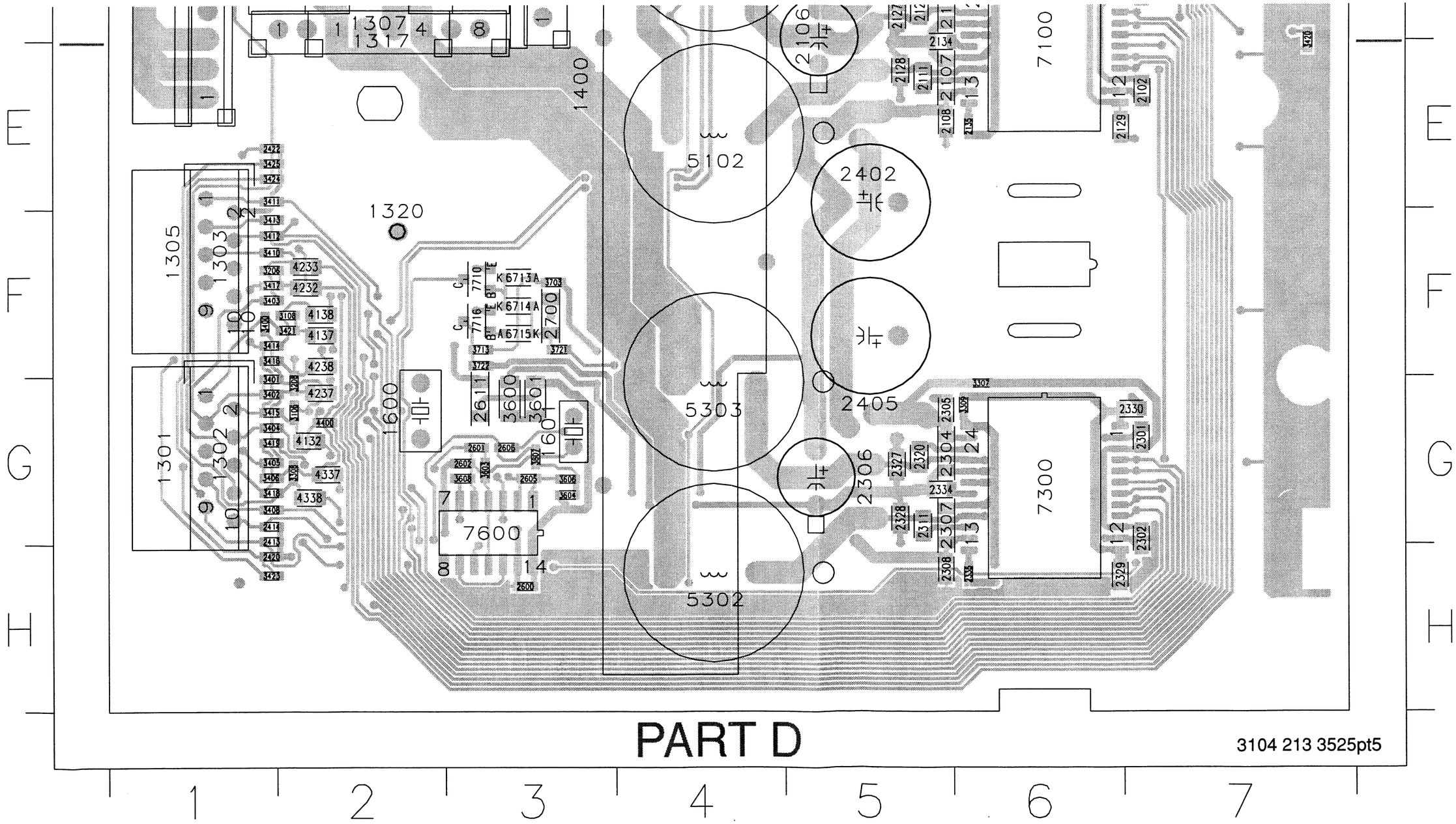
This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematics and respective parts list.

PART C



8-11c

AMPLIFIER BOARD - COMPONENT LAYOUT (pcb layout ... 35255) PART D



8-12

ELECTRICAL PARTS LIST - MAINS & ECO STBY, SUPPLY, SPEAKER (SPK I) & SW-OUT (SPK II) BOARDS

ELECTRICAL PARTS LIST - MAINS & ECO STBY, SUPPLY, SPEAKER (SPK I) & SW-OUT (SPK II) BOARDS

MISCELLANEOUS

5	4822 492 11735	SPRING, TRANSISTOR	
1200	4822 071 55002 ⚠	FUSE T5A 250V	
1203	4822 071 55002 ⚠	FUSE T5A 250V	
1204	9965 000 07786 ⚠	FUSE T4A 250V	
1205	9965 000 07786 ⚠	FUSE T4A 250V	
1263	4822 267 10733	FLEX CONN. 4PIN VERT.	
1270	2422 025 14044	CONN. 6PIN M3.96 VERT.	
1303	2422 015 19885	LOUDSPEAKER SOCKET 12P	
1901	2422 030 00328 ⚠	CONN. MAINS 7A 125V	/17/37
1901	4822 265 31015 ⚠	CONN. MAINS 2A5 250V	/78
1905	4822 252 51121 ⚠	FUSE T3,15A 250V	/17/37
1905	4822 071 53152 ⚠	FUSE T3,15A 250V	/78
1907	4822 265 20723	CONN. 2PIN M7.92 VERT.	
1908	4822 267 10958	FLEX CONN. 5PIN HORT.	
1909	4822 267 10728	CONN. 4P M7.92 VH	/78
1910	2422 132 07519 ⚠	RELAY 1P 12V 16A	
1911	9965 000 07789 ⚠	VOLTAGE SELECTOR	/78
1912	9965 000 07788 ⚠	FUSE T3,15A 250V	/78

CAPACITORS

2000	5322 126 11583	10nF 10% 50V
2001	5322 126 11583	10nF 10% 50V
2002	5322 126 11583	10nF 10% 50V
2003	5322 126 11583	10nF 10% 50V
2004	5322 126 11583	10nF 10% 50V
2005	5322 126 11583	10nF 10% 50V
2006	5322 126 11583	10nF 10% 50V
2007	5322 126 11583	10nF 10% 50V
2008	5322 126 11583	10nF 10% 50V
2009	5322 126 11583	10nF 10% 50V
2010	5322 126 11583	10nF 10% 50V
2011	5322 126 11583	10nF 10% 50V
2200	4822 126 12785	47nF +80/-20% 50V
2201	5322 124 40641	10uF 20% 100V
2202	4822 124 80231	47uF 20% 16V
2203	5322 121 42578	100nF 5% 250V
2204	5322 121 42578	100nF 5% 250V
2205	5322 121 42578	100nF 5% 250V
2206	4822 124 80563	4700uF 20% 35V
2207	4822 124 80563	4700uF 20% 35V
2208	5322 121 42661	330nF 5% 63V
2209	5322 121 42578	100nF 5% 250V
2211	4822 124 80563	4700uF 20% 35V
2212	5322 121 42386	100nF 5% 63V
2213	5322 121 42578	100nF 5% 250V
2215	2020 012 93745	10000uF 20% 16V
2217	2020 561 90365	100nF +80/-20% 50V
2218	4822 124 11947	10uF 20% 16V
2219	4822 124 81286	47uF 20% 16V
2220	4822 124 81286	47uF 20% 16V
2222	4822 124 12056	1000uF 20% 35V
2223	4822 124 12056	1000uF 20% 35V
2224	4822 124 41643	100uF 20% 16V
2225	4822 124 41643	100uF 20% 16V
2228	5322 124 40641	10uF 20% 100V
2229	4822 124 12032	4,7uF 20% 50V
2901	2238 586 59812	100nF 50V
2902	4822 121 43526	47nF 5% 250V
2903	3198 017 34730	47nF 16V
2904	2238 586 59812	100nF 50V
2905	5322 126 11583	10nF 10% 50V
2906	2222 336 19106	22nF 20% 275V
2907	4822 124 40255	100uF 20% 63V
2909	5322 126 11583	10nF 10% 50V
2910	2238 586 59812	100nF 50V
2911	4822 124 41751	47uF 20% 50V
2912	4822 124 12379	220uF 20% 25V
2913	2222 338 22474 ⚠	470nF 20% 275V
2914	4822 126 13193	4,7nF 10% 63V
2915	2020 554 90173 ⚠	2,2nF 20% 250V
2916	2020 554 90173 ⚠	2,2nF 20% 250V

RESISTORS

3200	4822 116 52283	4k7 5% 0,5W
3201	4822 051 30272	2k7 5% 0,062W
3202	4822 051 30103	10k 5% 0,062W
3203	4822 051 30103	10k 5% 0,062W
3204	4822 117 12925	47k 1% 0.063W
3205	4822 051 30103	10k 5% 0,062W
3206	4822 051 30681	680R 5% 0,062W
3207	4822 051 30331	330R 5% 0,062W
3208	4822 051 30681	680R 5% 0,062W
3209	4822 051 30472	4k7 5% 0,062W
3216	4822 051 30331	330R 5% 0,062W
3217	4822 051 30682	6k8 5% 0,062W
3218	4822 051 30153	15k 5% 0,062W
3219	4822 051 30102	1k 5% 0,062W
3222	4822 051 30102	1k 5% 0,062W
3223	4822 117 13632	100k 1% 0,062W
3224	4822 116 83872	220R 5% 0,5W
3225	4822 052 10828 ⚠	8R2 5% 0,33W
3226	4822 051 30471	470R 5% 0,062W
3227	4822 051 30102	1k 5% 0,062W
3228	4822 117 12063	NTC DC 5W 10k 5%
3229	4822 051 30472	4k7 5% 0,062W
3230	4822 051 30472	4k7 5% 0,062W
3233	4822 117 11817	1k2 5% 0,062W
3234	4822 051 30103	10k 5% 0,062W
3235	4822 051 30103	10k 5% 0,062W
3901	4822 053 21106	10M 5% 0,5W
3902	4822 051 30103	10k 5% 0,062W
3903	4822 051 30475	4M7 5% 0,062W
3904	4822 051 30331	330R 5% 0,062W
3905	4822 051 30331	330R 5% 0,062W
3906	4822 117 13632	100k 1% 0,062W
3907	4822 051 30333	33k 5% 0,062W
3908	4822 051 30105	1M 5% 0,062W
3909	4822 051 30471	470R 5% 0,062W
3910	4822 051 30222	2k2 5% 0,062W
3911	4822 117 13632	100k 1% 0,062W
3913	4822 117 12925	47k 1% 0.063W
3914	4822 117 12925	47k 1% 0.063W
3915	4822 053 21106	10M 5% 0,5W
3916	4822 051 30334	330k 5% 0,062W
3917	4822 116 52175	100R 5% 0,5W
3918	4822 116 52175	100R 5% 0,5W
3919	4822 051 30152	1k5 5% 0,062W
3920	4822 051 30472	4k7 5% 0,062W
4210	4822 051 30008	0R JUMPER 0603
4211	4822 051 30008	0R JUMPER 0603
4212	4822 051 30008	0R JUMPER 0603

COILS & FILTERS

5901	4822 157 11832	MAINS FILTER 400uH
5902	4822 157 53473	IND. FXD. 1000uH 10%
5903	4822 157 53473	IND. FXD. 1000uH 10%
5904	4822 157 11228	IND. FXD. 100uH 5%
5905	2422 549 45157	STANDBY TRANSFORMER

DIODES

6200	4822 130 30621	1N4148
6201	3198 010 52790	BZX79-B27
6202	4822 130 31878	1N4003G
6203	4822 130 34382	BZX79-B8V2
6205	3198 010 52790	BZX79-B27
6208	4822 130 11397	BAS316
6209	4822 130 11397	BAS316
6211	4822 130 11139	GBU8D
6212	3198 010 10640	GBU4K
6214	4822 130 30621	1N4148
6215	4822 130 34174	BZX79-B4V7
6216	4822 130 34145	BZX79-B39
6217	4822 130 31878	1N4003G
6218	4822 130 34145	BZX79-B39
6901	4822 130 31878	1N4003G
6902	4822 130 31878	1N4003G
6903	4822 130 11397	BAS316
6904	4822 130 11397	BAS316
6905	4822 130 11397	BAS316
6906	4822 130 31878	1N4003G
6907	4822 130 11397	BAS316
6908	4822 130 30621	1N4148
6909	4822 130 11397	BAS316
6910	4822 130 11397	BAS316
6911	4822 130 11397	BAS316
6912	4822 130 31878	1N4003G
6914	4822 130 11397	BAS316
6915	4822 130 34173	BZX79-C5V6
6916	4822 130 31878	1N4003G
6917	4822 130 34145	BZX79-B39
6918	4822 130 11397	BAS316
6919	4822 130 11397	BAS316
6920	4822 130 11397	BAS316
6921	4822 130 11397	BAS316

TRANSISTORS & INTEGRATED CIRCUITS

7200	9340 561 95127	BUK7535-55A
7202	9340 561 95127	BUK7535-55A
7203	5322 130 60159	BC847B
7205	4822 130 60373	BC857B
7206	4822 130 60373	BC857B
7207	5322 130 60159	BC847B
7208	4822 209 33575	L7812CP
7209	4822 209 12335	L4941
7210	4822 130 41246	BC327-25
7211	9340 218 60115	BC857CW
7901	4822 130 60373	BC857B
7902	4822 130 40855	BC337-40
7904	4822 130 42615	BC817-40
7905	4822 130 41327	BC327-40
7906	4822 130 42804	BC817-25

Note: Only the parts mentioned in this list are normal service spare parts.

LECTRICAL PARTS LIST - AMPLIFIER BOARD

IISCELLANEOUS

008	3104 211 29861	SPRING 6 CHANNEL
010	3104 211 29881	EARTH SPRING
302	4822 267 10729	FLEX CONN. 10PIN VERT.
303	4822 267 10729	FLEX CONN. 10PIN VERT.
600	2422 540 98514	CERAM RESONATOR 602,7KHZ
601	2422 540 98568	CERAM RESONATOR 700KHZ

:APACITORS

101	2222 580 15649	100nF 10% 50V
102	2222 580 15649	100nF 10% 50V
104	2222 601 55649	100nF 10% 100V
105	2222 580 15649	100nF 10% 50V
106	2020 021 91431	22uF 20% 100V
107	2222 601 55649	100nF 10% 100V
108	2222 580 15649	100nF 10% 50V
111	4822 126 13188	15nF 5% 63V
114	5322 116 80853	560pF 5% 63V
115	5322 116 80853	560pF 5% 63V
116	4822 121 51252	470nF 5% 63V
117	2222 601 55649	100nF 10% 100V
120	4822 126 13188	15nF 5% 63V
122	5322 116 80853	560pF 5% 63V
124	2222 601 55649	100nF 10% 100V
125	4822 121 51252	470nF 5% 63V
126	5322 116 80853	560pF 5% 63V
127	2222 580 15649	100nF 10% 50V
128	2222 580 15649	100nF 10% 50V
129	2222 580 15649	100nF 10% 50V
130	2222 580 15649	100nF 10% 50V
131	4822 126 14241	330pF 50V
134	2238 780 55654	220nF 10% 16V
135	4822 126 13956	68pF 5% 63V
136	4822 126 14241	330pF 50V
201	2222 580 15649	100nF 10% 50V
202	2222 580 15649	100nF 10% 50V
204	2222 601 55649	100nF 10% 100V
205	2222 580 15649	100nF 10% 50V
206	2020 021 91431	22uF 20% 100V
207	2222 601 55649	100nF 10% 100V
208	2222 580 15649	100nF 10% 50V
211	4822 126 13188	15nF 5% 63V
214	5322 116 80853	560pF 5% 63V
215	5322 116 80853	560pF 5% 63V
216	4822 121 51252	470nF 5% 63V
217	2222 601 55649	100nF 10% 100V
220	4822 126 13188	15nF 5% 63V
222	5322 116 80853	560pF 5% 63V
224	2222 601 55649	100nF 10% 100V
225	4822 121 51252	470nF 5% 63V
226	5322 116 80853	560pF 5% 63V
227	2222 580 15649	100nF 10% 50V
228	2222 580 15649	100nF 10% 50V
2229	2222 580 15649	100nF 10% 50V
2230	2222 580 15649	100nF 10% 50V
2231	4822 126 14241	330pF 50V
2234	2238 780 55654	220nF 10% 16V
2235	4822 126 13956	68pF 5% 63V
2236	4822 126 14241	330pF 50V
2301	2222 580 15649	100nF 10% 50V
2302	2222 580 15649	100nF 10% 50V
2304	2222 601 55649	100nF 10% 100V
2305	2222 580 15649	100nF 10% 50V
2306	2020 021 91431	22uF 20% 100V
2307	2222 601 55649	100nF 10% 100V
2308	2222 580 15649	100nF 10% 50V
2311	4822 126 13188	15nF 5% 63V
2314	5322 116 80853	560pF 5% 63V
2315	5322 116 80853	560pF 5% 63V
2316	4822 121 51252	470nF 5% 63V
2317	2222 601 55649	100nF 10% 100V
2320	4822 126 13188	15nF 5% 63V
2322	5322 116 80853	560pF 5% 63V
2324	2222 601 55649	100nF 10% 100V
2325	4822 121 51252	470nF 5% 63V
2326	5322 116 80853	560pF 5% 63V
2327	2222 580 15649	100nF 10% 50V
2328	2222 580 15649	100nF 10% 50V
2329	2222 580 15649	100nF 10% 50V
2330	2222 580 15649	100nF 10% 50V
2331	4822 126 14241	330pF 50V
2334	2238 780 55654	220nF 10% 16V
2335	4822 126 13956	68pF 5% 63V
2336	4822 126 14241	330pF 50V
2400	2222 580 15649	100nF 10% 50V
2401	4822 124 80062	470uF 20% 35V
2402	4822 124 80062	470uF 20% 35V
2403	2222 580 15649	100nF 10% 50V
2404	4822 124 80062	470uF 20% 35V
2405	4822 124 80062	470uF 20% 35V
2406	4822 123 14026	470uF 20% 35V
2407	4822 123 14026	470uF 20% 35V
2408	5322 126 11578	1nF 10% 50V
2409	5322 126 11578	1nF 10% 50V
2410	5322 126 11578	1nF 10% 50V
2411	5322 126 11578	1nF 10% 50V
2412	5322 126 11578	1nF 10% 50V
2413	5322 126 11578	1nF 10% 50V
2414	5322 126 11578	1nF 10% 50V
2415	5322 126 11578	1nF 10% 50V
2416	5322 126 11578	1nF 10% 50V
2417	5322 126 11578	1nF 10% 50V
2418	5322 126 11578	1nF 10% 50V
2419	2238 586 59812	100nF 50V
2420	5322 126 11578	1nF 10% 50V

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ELECTRICAL PARTS LIST - AMPLIFIER BOARD

2421	5322 126 11578	1nF 10% 50V
2422	5322 126 11578	1nF 10% 50V
2423	2238 586 59812	100nF 50V
2425	5322 126 11578	1nF 10% 50V
2500	2238 586 59812	100nF 50V
2501	2238 586 59812	100nF 50V
2600	2238 586 59812	100nF 50V
2602	2020 552 94427	100pF 5% 50V
2603	2020 552 94427	100pF 5% 50V
2604	2238 586 59812	100nF 50V
2605	4822 126 13881	470pF 5% 50V
2606	5322 126 11578	1nF 10% 50V
2607	2020 552 94427	100pF 5% 50V
2608	2020 552 94427	100pF 5% 50V
2611	2020 552 96507	10uF +80/-20% 10V
2700	2020 552 96507	10uF +80/-20% 10V

RESISTORS

3100	4822 051 10568	5R6 5% 0,25W
3101	4822 051 10568	5R6 5% 0,25W
3102	4822 051 10568	5R6 5% 0,25W
3103	2322 762 60229	22R 5% PRC221
3104	2322 762 60229	22R 5% PRC221
3105	4822 051 10568	5R6 5% 0,25W
3107	4822 051 30109	10R 5% 0,062W
3109	4822 051 30109	10R 5% 0,062W
3200	4822 051 10568	5R6 5% 0,25W
3201	4822 051 10568	5R6 5% 0,25W
3202	4822 051 10568	5R6 5% 0,25W
3203	2322 762 60229	22R 5% PRC221
3204	2322 762 60229	22R 5% PRC221
3205	4822 051 10568	5R6 5% 0,25W
3207	4822 051 30109	10R 5% 0,062W
3209	4822 051 30109	10R 5% 0,062W
3300	4822 051 10568	5R6 5% 0,25W
3301	4822 051 10568	5R6 5% 0,25W
3302	4822 051 10568	5R6 5% 0,25W
3303	2322 762 60229	22R 5% PRC221
3304	2322 762 60229	22R 5% PRC221
3305	4822 051 10568	5R6 5% 0,25W
3307	4822 051 30109	10R 5% 0,062W
3309	4822 051 30109	10R 5% 0,062W
3401	4822 051 30562	5k6 5% 0,063W
3404	4822 051 30221	220R 5% 0,062W
3405	4822 051 30562	5k6 5% 0,063W
3408	4822 051 30221	220R 5% 0,062W
3410	4822 051 30562	5k6 5% 0,063W
3411	4822 051 30562	5k6 5% 0,063W
3412	4822 051 30221	220R 5% 0,062W
3413	4822 051 30562	5k6 5% 0,063W
3414	4822 051 30562	5k6 5% 0,063W
3415	4822 051 30562	5k6 5% 0,063W
3420	2322 615 23103	NTC 10k 5% 0,125W
3421	4822 051 30562	5k6 5% 0,063W
3422	4822 051 30101	100R 5% 0,062W
3423	4822 051 30562	5k6 5% 0,063W
3424	4822 051 30562	5k6 5% 0,063W
3425	4822 051 30562	5k6 5% 0,063W
3426	4822 051 30562	5k6 5% 0,063W
3600	4822 051 10821	820R 5% 0,062W
3601	4822 051 10821	820R 5% 0,062W
3602	4822 117 13632	100k 1% 0,062W
3604	4822 051 30103	10k 5% 0,062W
3605	4822 051 30682	6k8 5% 0,062W
3606	4822 117 13632	100k 1% 0,062W
3607	4822 051 30102	1k 5% 0,062W
3608	4822 051 30105	1M 5% 0,062W
3609	4822 117 13632	100k 1% 0,062W
3610	4822 117 12139	22R 5% 0,062W
3700	4822 117 12925	47k 1% 0.063W
3701	4822 117 12925	47k 1% 0.063W
3703	4822 117 12925	47k 1% 0.063W
3709	4822 117 12925	47k 1% 0.063W
3712	4822 117 12925	47k 1% 0.063W
3713	4822 051 30103	10k 5% 0,062W
3716	4822 117 12925	47k 1% 0.063W
3718	4822 117 12925	47k 1% 0.063W
3721	4822 051 30103	10k 5% 0,062W
3722	4822 051 30103	10k 5% 0,062W
4132	4822 126 14583	470nF 16V
4133	4822 126 14583	470nF 16V
4137	4822 126 14583	470nF 16V
4138	4822 126 14583	470nF 16V
4232	4822 126 14583	470nF 16V
4233	4822 126 14583	470nF 16V
4237	4822 126 14583	470nF 16V
4238	4822 126 14583	470nF 16V
4332	4822 126 14583	470nF 16V
4333	4822 126 14583	470nF 16V
4337	4822 126 14583	470nF 16V
4338	4822 126 14583	470nF 16V

COILS & FILTERS

5102	2422 536 00496	IND. FXD. 22uH 10%
5103	2422 536 00496	IND. FXD. 22uH 10%
5202	2422 536 00496	IND. FXD. 22uH 10%
5203	2422 536 00496	IND. FXD. 22uH 10%
5302	2422 536 00496	IND. FXD. 22uH 10%
5303	2422 536 00496	IND. FXD. 22uH 10%
5400	4822 157 11411	FXD. IND. BEAD 100MHZ 80R
5401	4822 157 11411	FXD. IND. BEAD 100MHZ 80R

8-14

ELECTRICAL PARTS LIST - AMPLIFIER BOARD

DIODES

6600	3198 020 55680	BZX384-C5V6
6713	4822 130 11397	BAS316
6714	4822 130 11397	BAS316
6715	4822 130 11397	BAS316

TRANSISTORS & INTEGRATED CIRCUITS

7100	9352 705 74518	TDA8920TH/N1R
7200	9352 705 74518	TDA8920TH/N1R
7300	9352 705 74518	TDA8920TH/N1R
7600	5322 209 11517	PC74HCU04T
7602	5322 130 60159	BC847B
7607	5322 209 14477	HEF4013BT
7608	4822 130 60373	BC857B
7710	5322 130 60159	BC847B
7716	4822 130 60373	BC857B

Note: Only the parts mentioned in this list are normal service spare parts.

AV BOARD

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9-1

BRIEF INTRODUCTION OF THE AV BOARD

The AV Board consists of the following features :

a. IC 7130 (TDA7468D)

IC 7130 provides the source selection (TUNER, TV/AV Digital in, DVD/CD & AUX) and basic sound processing - bass, treble, volume & mute controls for the Front L/R loudspeakers.

Note: Although provided for, the AUX source (pin 3 and 26) are never selected & instead and additional IC 7422 (HEF4052BT) is used to include a TV in from the Scart connector socket.

Sound features are controlled by the microprocessor IC on the Front Board via I²C Bus.

Undesirable noise during source switching are muted off via the software of the microprocessor IC on the Front Board.

b. IC 7422 (HEF4052BT)

This IC allows the additon of another TV source via the SCART connector socket. The output MUX_L/MUX_R will go to pin 4 and 25 of IC 7130.

c. Line out mute

Line out mute is done via the transistors 7100, 7132, 7133 and 7150 during Power up/down, Source and sound switching (MUTE-LO, active low) and Disc & Digital in modes (MUTE_AV, active high).

d. Headphone amplifier / pre-amplifier

IC 7230 (NJM4556AM) is used as headphone amplifer and pre-amplification for the Front L/R signal to the Amplifier board. The transistors matrix 7200, 7231, 7232, 7233 and 7250 allows the heaphone out to be muted when inserting the headphone

e. IC 7304 and 7330 (TDA7468D)

IC 7304 and 7330 provides creation of matrix sound (via Line-L/R from IC 7130) during non-DVD source and sound processing - bass, treble, volume & mute controls for the Center/Subwoofer and Surround L/R loudspeakers respectively.

Sound features are controlled by the microprocessor IC on the Front Board via I²C Bus.

Undesirable noise during source switching are muted off via the software of the microprocessor IC on the Front Board.

f. IC 7352 (74HC4051D)

This multiplexer output (MUX_DET) informs the microprocess IC on the Front Board on the type of connection & condition the set is in.

g. IC 7402 (M62320FP)

The IC serves as I²C Expander to provide for additional control lines required.

9-2

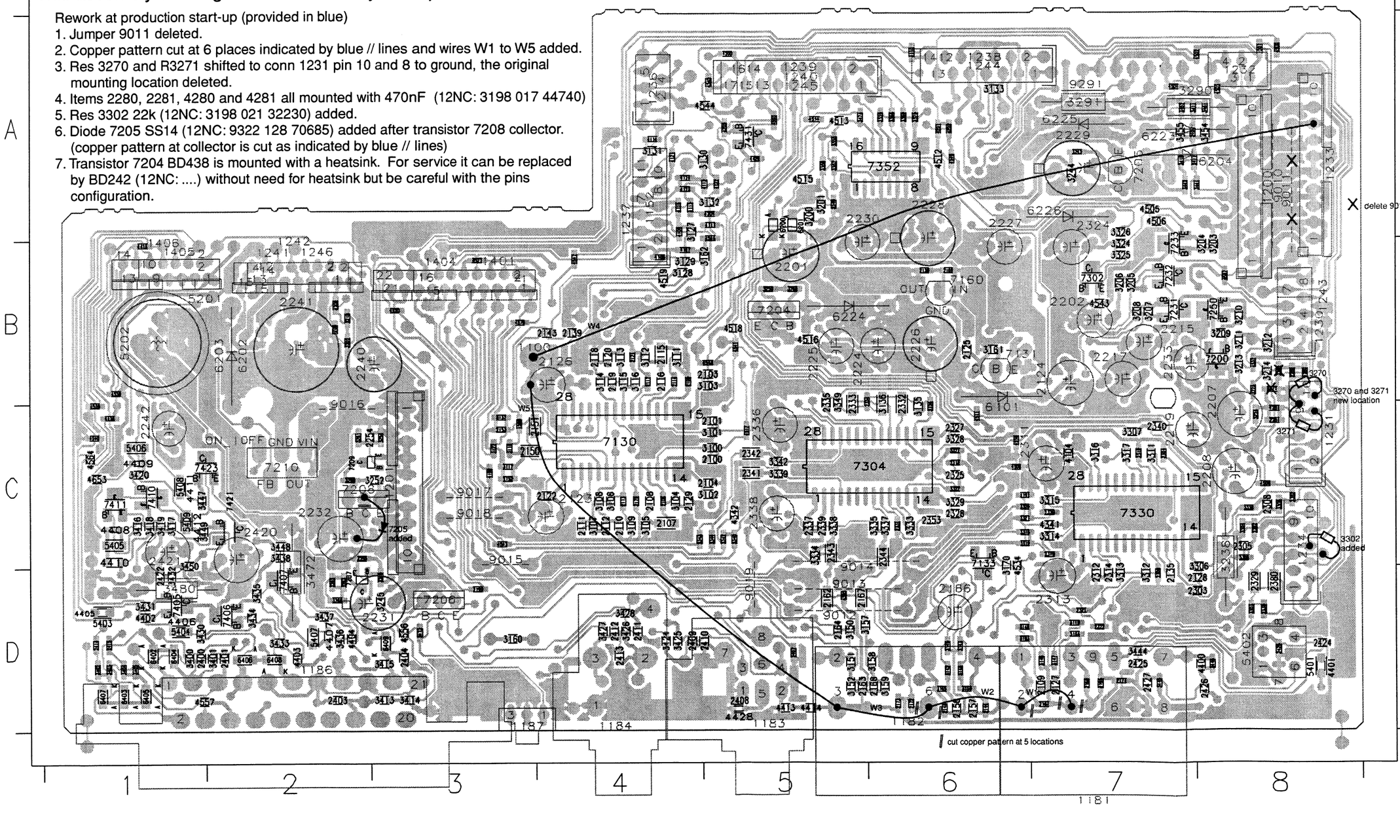
CHIP & COMPONENT LAYOUTS - CHIP SIDE VIEW

2100 C5 2121 B4 2162 D5 2309 D7 2337 C5 2411 D4 3107 C4 3136 C6 3164 D7 3224 C8 3305 C8 3328 C6 3369 A6 3427 D4 3451 A8 4191 C6 4406 D1 4507 B8 4541 B5 5405 C1 7231 B7
2101 C5 2122 A4 2163 D5 2310 C7 2338 C5 2412 D4 3108 C4 3137 C3 3165 D6 3225 B8 3306 D8 3329 C6 3370 A6 3428 D4 3452 A7 4192 C3 4407 D2 4508 C8 4542 C3 5406 C1 7232 B7
2103 B5 2125 B6 2164 D5 2312 D7 2340 C7 2413 D4 3109 C4 3138 C6 3166 D6 3243 A7 3307 C7 3330 D1 3454 A8 4196 D7 4408 C1 4509 C6 4543 B7 5407 D2 7250 B8
2104 C5 2127 D7 2167 D5 2314 D7 2341 C5 2414 D1 3110 C3 3142 D6 3170 C6 3244 A7 3308 C6 3331 D2 3455 D7 4200 A5 4409 C1 4510 C6 4544 A5 5408 C1 7302 B7
2105 B4 2128 D8 2168 D8 2315 D7 2342 C5 2415 D1 3111 B4 3145 D6 3201 A5 3250 C2 3311 D7 3332 D2 3474 A5 4201 A6 4410 C1 4511 C6 4545 A5 5409 C1 7303 B7
2106 B4 2129 C4 2169 C5 2319 C7 2343 C5 2417 A7 3112 B4 3146 D7 3202 B2 3251 C3 3312 D7 3333 D2 4104 C7 4202 A6 4411 C1 4512 A6 4546 A5 6200 A5 7304 C6
2107 C4 2135 D7 2170 C4 2320 C7 2344 C6 2418 A7 3113 B4 3147 D7 3203 B3 3252 C3 3313 D7 3334 D2 4106 B4 4203 A5 4412 C1 4513 A5 4547 B4 6201 A5 7330 C7
2108 C4 2136 B6 2171 D7 2321 D7 2349 A5 2422 D1 3114 B4 3148 D7 3204 B8 3254 C3 3314 C7 3335 D2 4107 B4 4204 B5 4413 D5 4514 A5 4548 B5 6401 D1 7352 A6
2109 D7 2139 B4 2172 D6 2322 D7 2350 C8 2424 D8 3115 B4 3149 D6 3205 B7 3259 D5 3315 C7 3336 D2 4108 B4 4205 B5 4414 D5 4515 A5 4549 A6 6403 D1 7405 D1
2110 C4 2143 B4 2173 D7 2325 C6 2352 D8 2425 D8 3116 B4 3150 D5 3206 B7 3260 D5 3316 C7 3337 D2 4109 A4 4206 B5 4415 B1 4516 B5 4556 D3 6404 D1 7406 D2
2111 C4 2144 D6 2174 D7 2326 C6 2380 D8 2426 D8 3117 C3 3151 D5 3207 B7 3261 C2 3317 C7 3338 C2 4110 A6 4280 B8 4416 C1 4517 B5 4557 D1 6405 D1 7407 D2
2112 C4 2145 D6 2199 D3 2327 C6 2400 D1 2427 D7 3122 C3 3152 D5 3208 B7 3262 D2 3318 C6 3343 C4 4111 A5 4281 C6 4428 A5 4518 B5 4564 C1 6406 D2 7410 C1
2113 C4 2150 C3 2254 C7 2328 C6 2401 D2 2428 D8 3123 B4 3153 D5 3209 B8 3263 D3 3319 C7 3344 C5 4112 A5 4341 C7 4429 D5 4519 B4 4579 C3 6407 D1 7411 C1
2114 B4 2151 C3 2280 B8 2329 D8 2402 A7 3100 C5 3124 B4 3154 D6 3210 B8 3264 D2 3320 C6 3345 C5 4113 A4 4342 C5 4500 A8 4520 B3 4585 D5 6408 D2 7421 C2
2115 B4 2152 C3 2281 C8 2330 D8 2403 D2 3101 C5 3125 B4 3155 D6 3211 B8 3265 B5 3321 C6 3346 C5 4114 A4 4400 D8 4501 A8 4521 B3 4593 A5 6409 D3 7423 C1
2116 B4 2153 C3 2302 C8 2331 C6 2404 D3 3102 C5 3130 A5 3159 D6 3212 B8 3266 C2 3322 C6 3355 A5 4115 A4 4401 D8 4502 A8 4534 C6 4596 C3 7130 C4 7431 A5
2117 B4 2156 D6 2303 D8 2332 C6 2407 D5 3103 B5 3131 A4 3160 D5 3213 B8 3270 B8 3323 B7 3356 A5 4116 A4 4402 D1 4503 A8 4537 B8 4653 C1 7133 C6
2118 B4 2157 D6 2304 C7 2333 C6 2408 D5 3104 C4 3132 A5 3161 B5 3214 B8 3271 B8 3324 B7 3357 A5 4120 A5 4403 D2 4504 A7 4538 B1 5401 D8 7200 B8
2119 B4 2160 D7 2305 C8 2334 B5 2409 D4 3105 C4 3133 A6 3162 B5 3215 B2 3303 D8 3326 A7 3359 A6 3425 D4 4404 D2 4505 A7 4539 C1 5403 D1 7207 D2
2120 B4 2161 D7 2308 C8 2335 B5 2410 D5 3106 C4 3135 C6 3163 D6 3304 C8 3327 C6 3368 A6 3426 D4 3450 C1 4124 A4 4405 D1 4506 A7 4540 C1 5404 D1 7209 C2

This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list

Rework at production start-up (provided in blue)

1. Jumper 9011 deleted.
2. Copper pattern cut at 6 places indicated by blue // lines and wires W1 to W5 added.
3. Res 3270 and R3271 shifted to conn 1231 pin 10 and 8 to ground, the original mounting location deleted.
4. Items 2280, 2281, 4280 and 4281 all mounted with 470nF (12NC: 3198 017 44740)
5. Res 3302 22k (12NC: 3198 021 32230) added.
6. Diode 7205 SS14 (12NC: 9322 128 70685) added after transistor 7208 collector. (copper pattern at collector is cut as indicated by blue // lines)
7. Transistor 7204 BD438 is mounted with a heatsink. For service it can be replaced by BD242 (12NC: ....) without need for heatsink but be careful with the pins configuration.



9-2a

CHIP & COMPONENT LAYOUTS - CHIP SIDE VIEW (pcb layout ... 35006)

2100	C5	2145	D6	2199	C4	2335	B5	2412	D4	3108	C4	3152	D5	3225	B8	3318	C6	3369	A6	3436	D2	4192	C3	4419	C1	4520	B3	5407	C1
2101	C5	2150	C3	2254	C2	2337	C5	2413	D4	3109	C4	3154	D6	3243	A7	3319	C6	3370	A6	3437	D2	4193	B8	4421	C8	4521	B3	5408	B1
2103	B5	2151	C3	2280	B8	2339	C5	2414	D1	3110	C3	3157	D5	3244	A7	3320	C6	3400	D1	3438	D2	4194	B8	4422	B7	4528	D2	5409	B1
2104	C5	2152	C3	2281	C8	2340	C5	2415	D1	3111	B4	3158	D5	3245	D3	3321	C6	3401	D1	3441	A8	4195	D7	4424	D4	4534	C6	6123	B6
2105	B4	2153	B3	2282	B8	2341	C5	2417	A7	3112	B4	3159	D6	3550	C2	3322	C6	3402	D1	3442	A7	4196	D7	4425	D4	4539	A1	6200	A5
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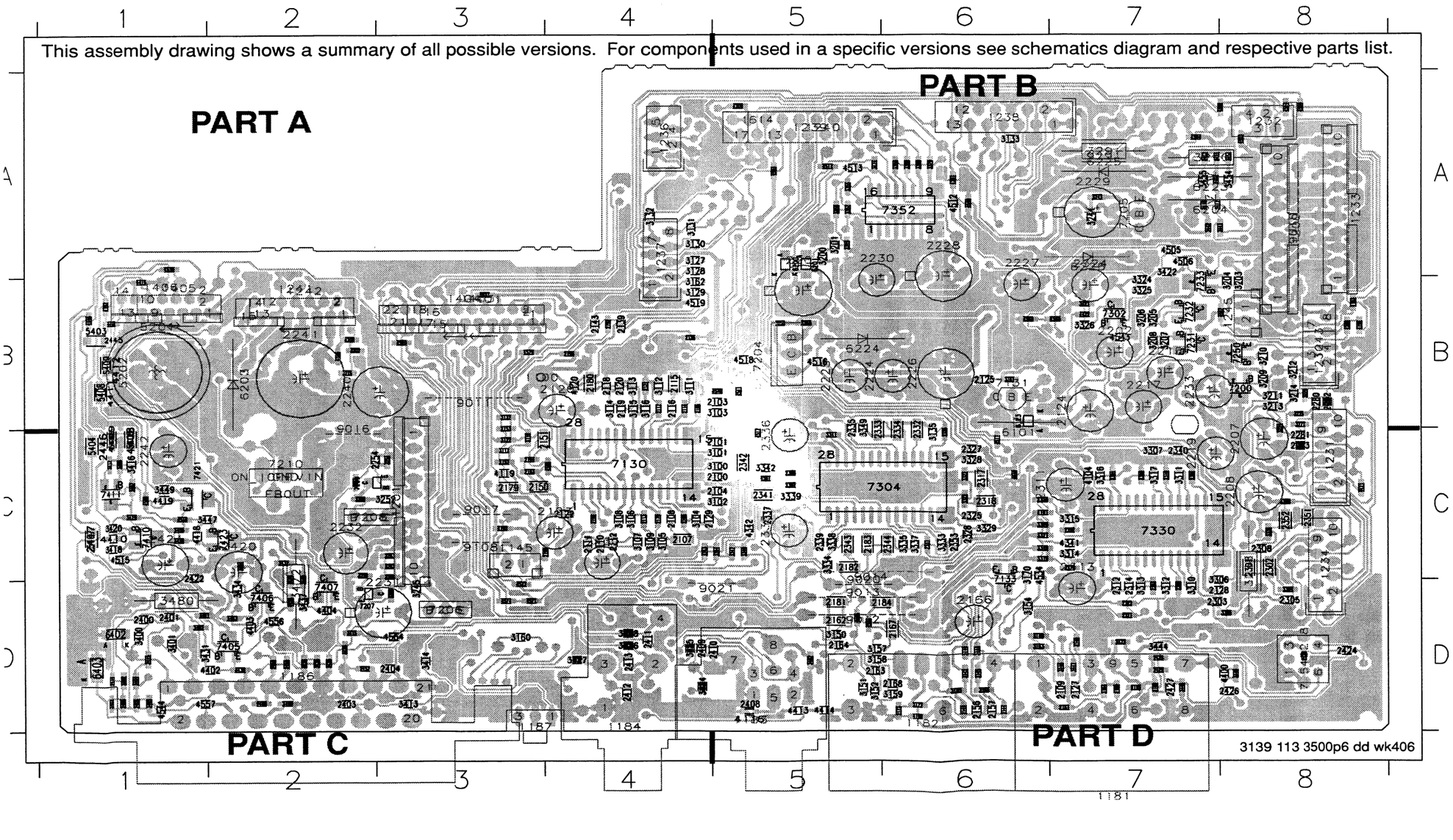
This assembly drawing shows a summary of all possible versions. For components used in a specific versions see schematics diagram and respective parts list.



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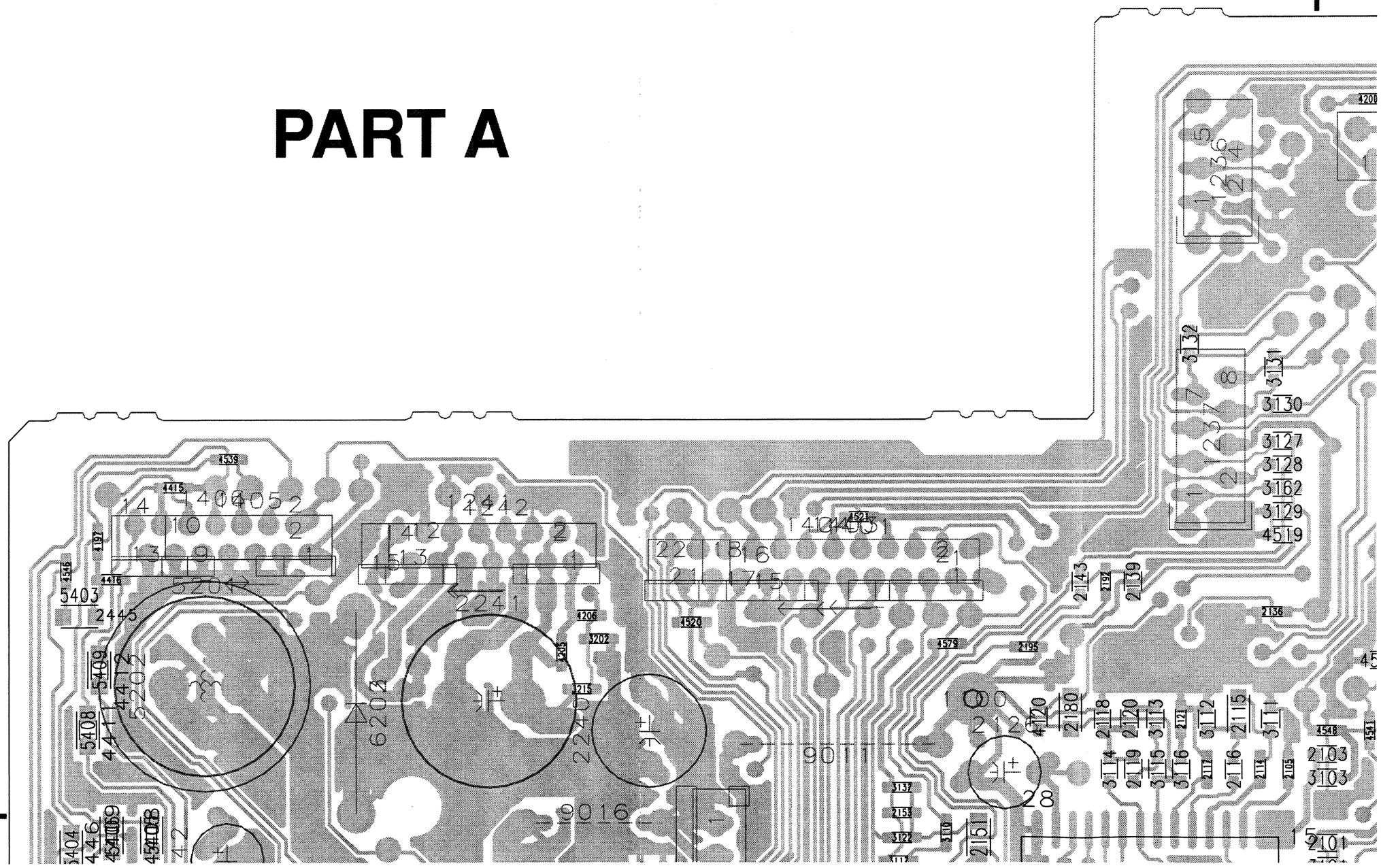
9-2b

CHIP & COMPONENT LAYOUTS - CHIP SIDE VIEW (pcb layout ... 35006) PART A

This assembly drawing shows a summary of all possible versions. For components

PART A



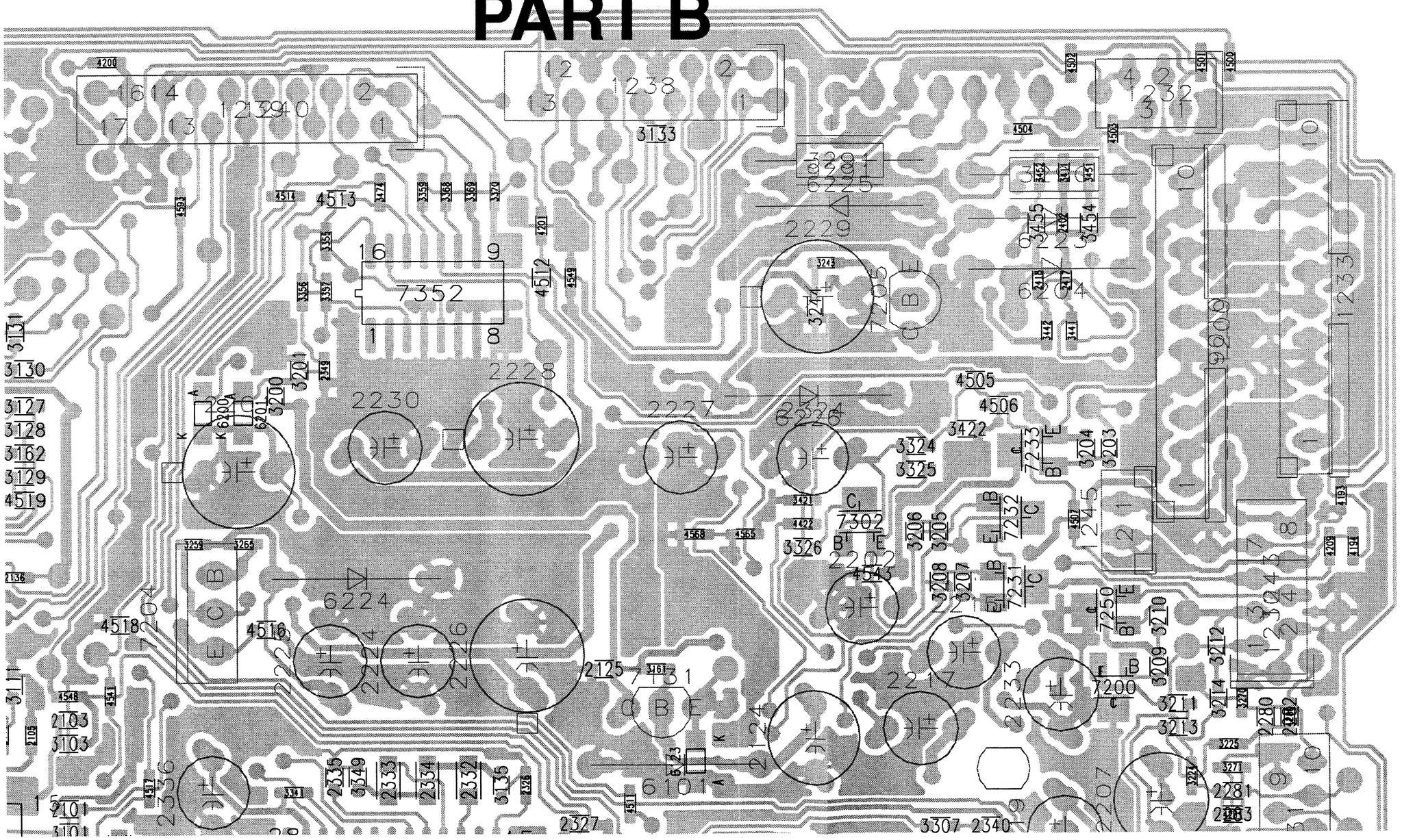
9-2c

CHIP & COMPONENT LAYOUTS - CHIP SIDE VIEW (pcb layout ... 35006) PART B

5 6 7 8

onents used in a specific versions see schematics diagram and respective parts list.

PART B

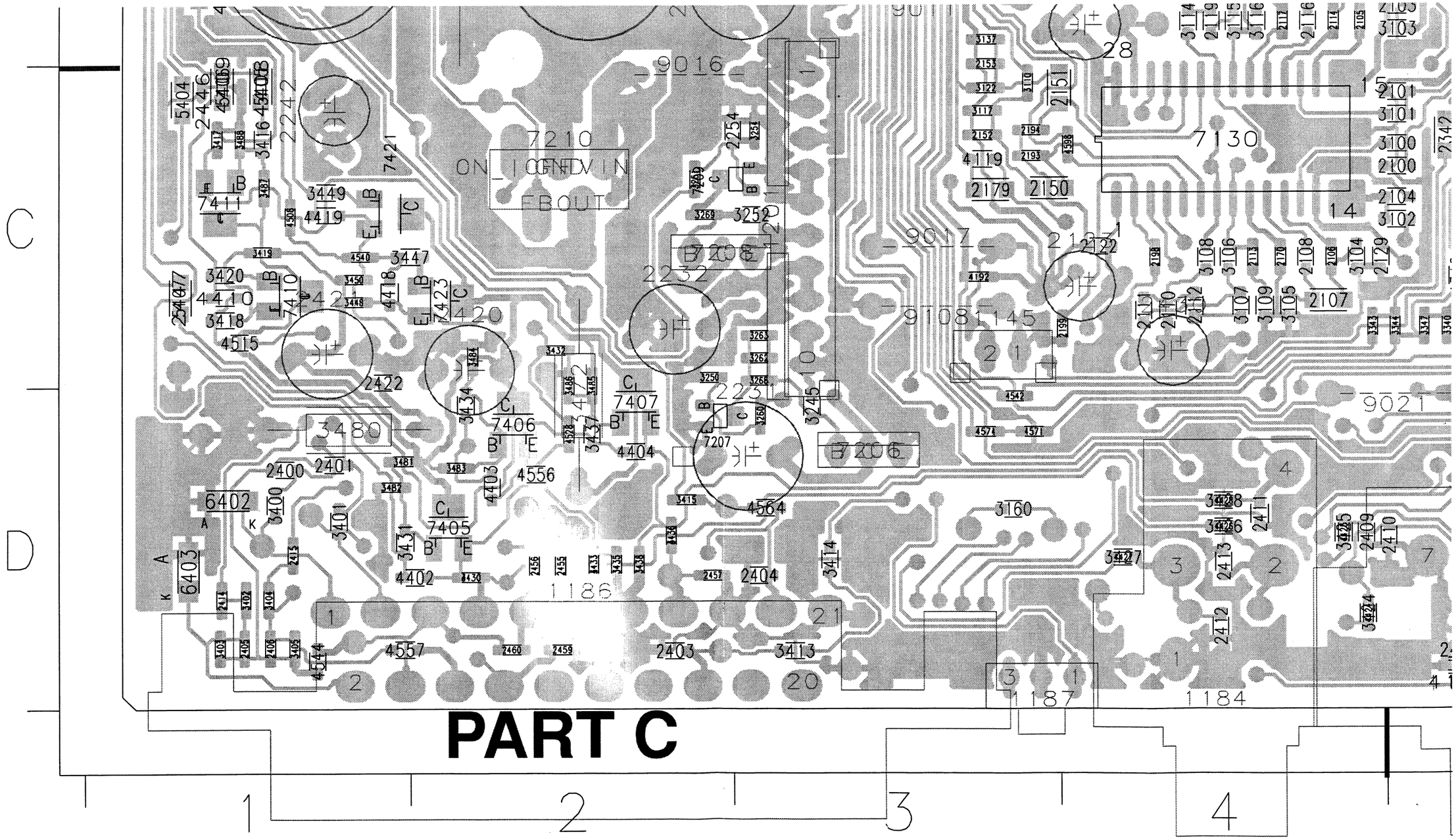


A

B

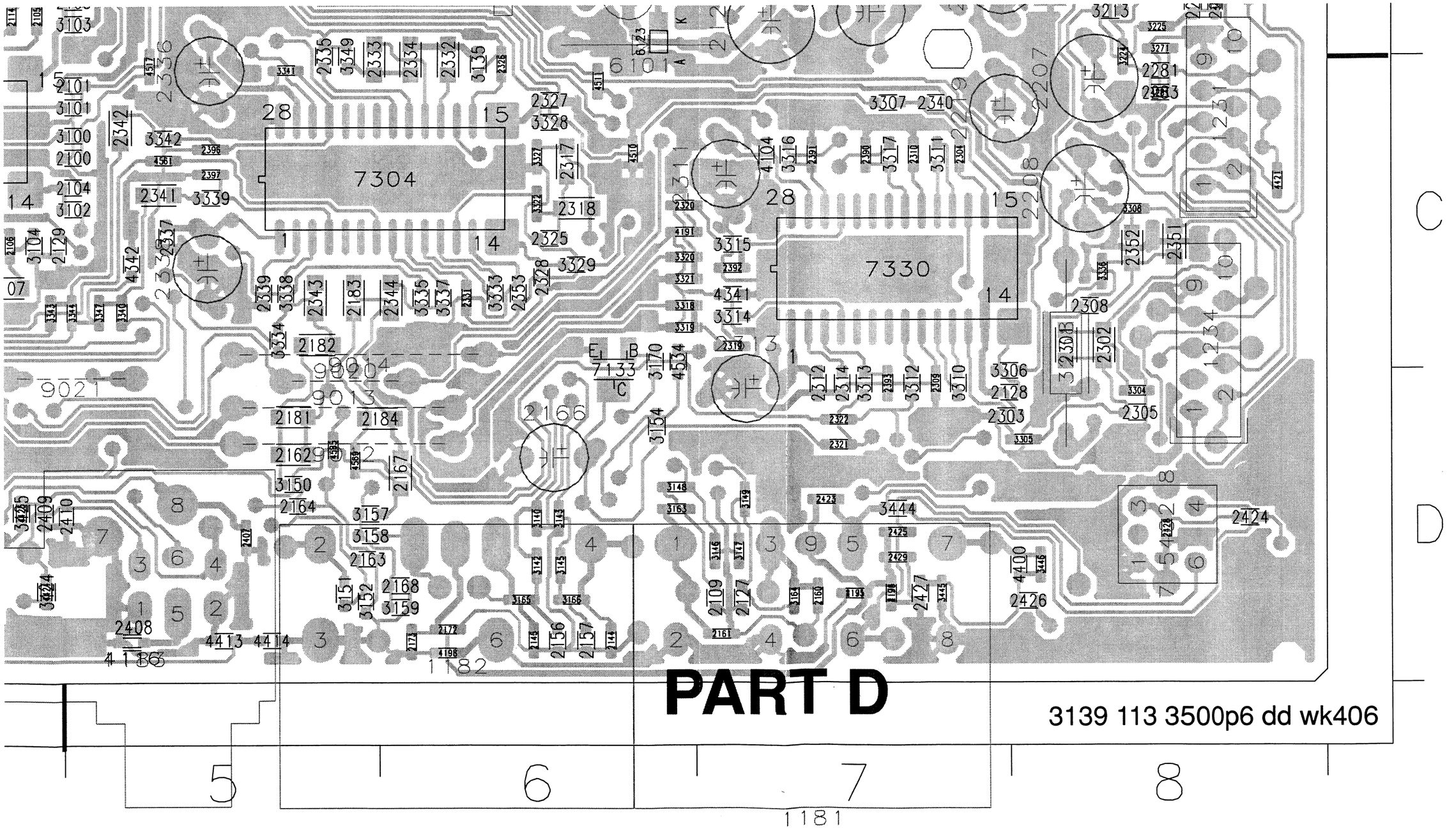
9-2d

CHIP & COMPONENT LAYOUTS - CHIP SIDE VIEW (pcb layout ... 35006) PART C



9-2e

CHIP & COMPONENT LAYOUTS - CHIP SIDE VIEW (pcb layout ... 35006) PART D



PART D

3139 113 3500p6 dd wk406

9-3

COMPONENT & CHIP LAYOUT - COMPONENT SIDE VIEW

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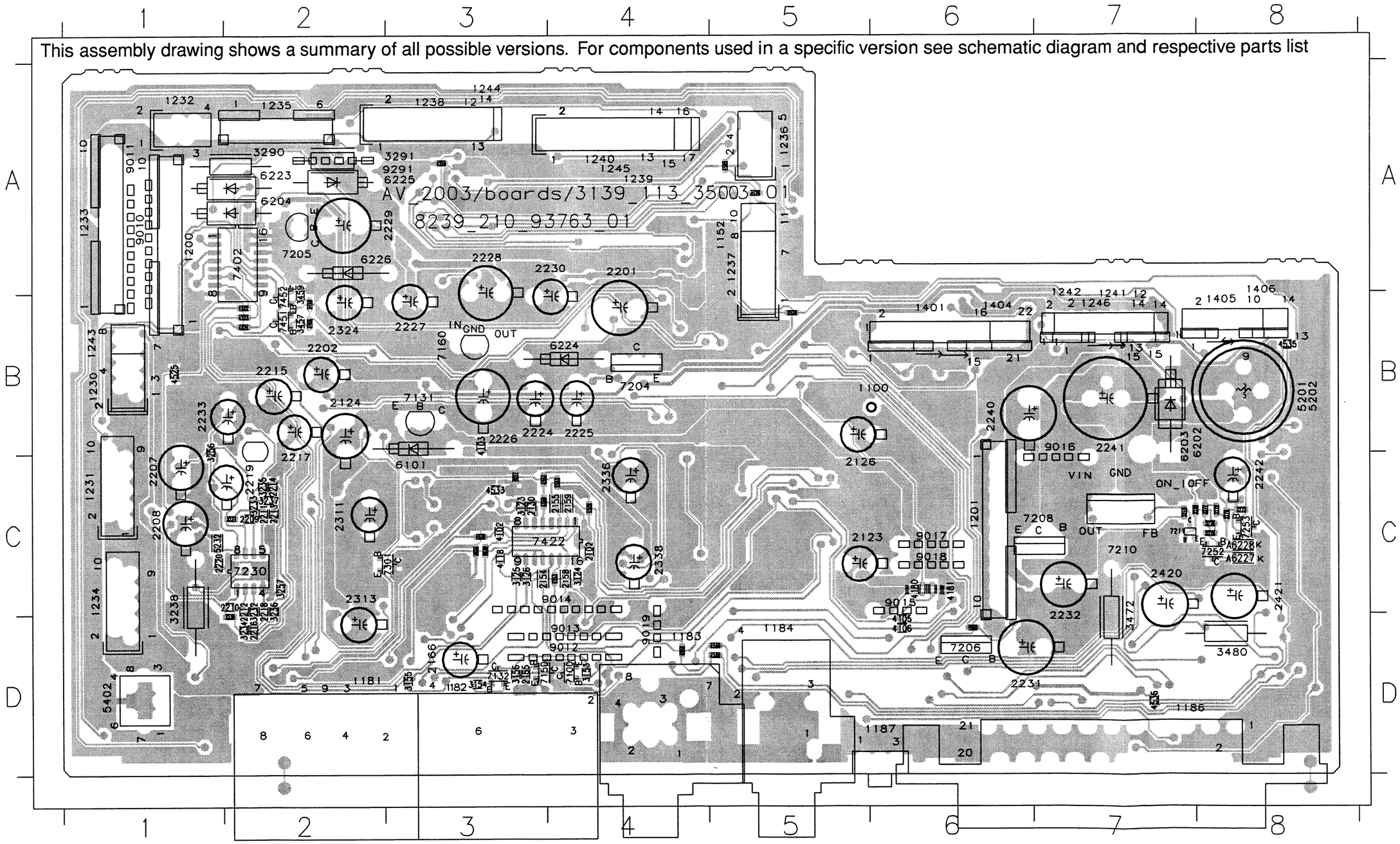
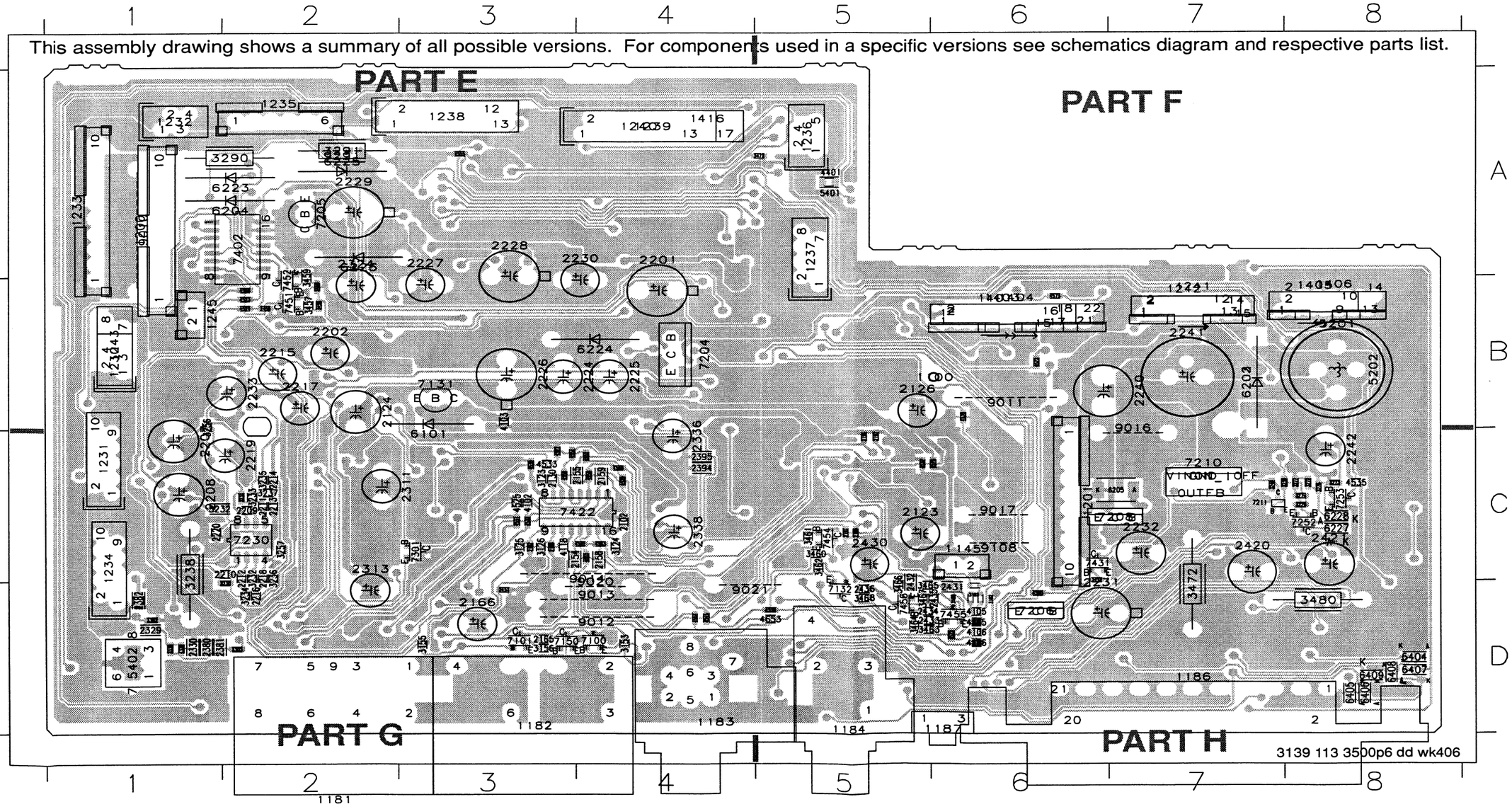
1181 D2	1232 A1	1242 A7	2123 C5	2201 A4	2215 B2	2228 A3	2313 C3	3153 D4	3234 D2	3273 C8	3459 B2	4520 B2	4532 C3	4556 D5	6203 B7	7132 D3	7252 C8	9013 D4
1182 D3	1233 A1	1243 B1	2124 B5	2202 B2	2216 D2	2229 A3	2324 B2	3154 D3	3235 C2	3274 C8	3472 D7	4523 B2	4533 C3	4559 D5	6204 A2	7150 D3	7253 C8	9014 C4
1183 D4	1234 C1	1244 A3	2126 B6	2207 C1	2218 C2	2230 A4	2336 C4	3155 D3	3236 C2	3275 C8	3460 D8	4524 B2	4535 B8	4560 D6	6223 A2	7160 B3	7301 C3	9015 C6
1184 D5	1235 A2	1245 A4	2130 C3	2208 C1	2219 C2	2231 D6	2338 C4	3156 D3	3237 C2	3276 C8	4102 C3	4525 B1	4536 D7	4599 A5	6224 B4	7204 B4	7402 A2	9016 B7
1186 D7	1236 A5	1246 B7	2154 C3	2209 C2	2219 C2	2232 D7	2420 C7	3180 C6	3238 C1	3277 C8	4103 B3	4526 A3	4550 C3	5201 B8	6225 A3	7205 A2	7421 C4	9017 C6
1187 D6	1237 A5	1401 B6	2155 C4	2210 C2	2220 C1	2421 C8	3181 C6	3239 C7	3290 A2	4105 D6	4527 C3	4551 C3	5202 B8	6226 A2	7206 D6	7421 B2	9018 C6
1200 A1	1238 A3	1404 B6	2158 C4	2211 C2	2224 B1	2422 B6	3123 C6	3240 C7	3291 A3	4106 D6	4528 B5	4552 C4	5235 C1	6227 C8	7208 C7	7452 B2	9019 D4
1201 C6	1239 A4	1405 B8	2159 C4	2212 C2	2225 B4	2241 B7	3124 C4	3231 C2	3256 B1	3456 B2	4118 C3	4529 C4	4553 C4	5402 D1	6228 C8	7210 C7	9010 A1	9291 A3



9-3a

COMPONENT & CHIP LAYOUT - COMPONENT SIDE VIEW (pcb layout ... 35006)

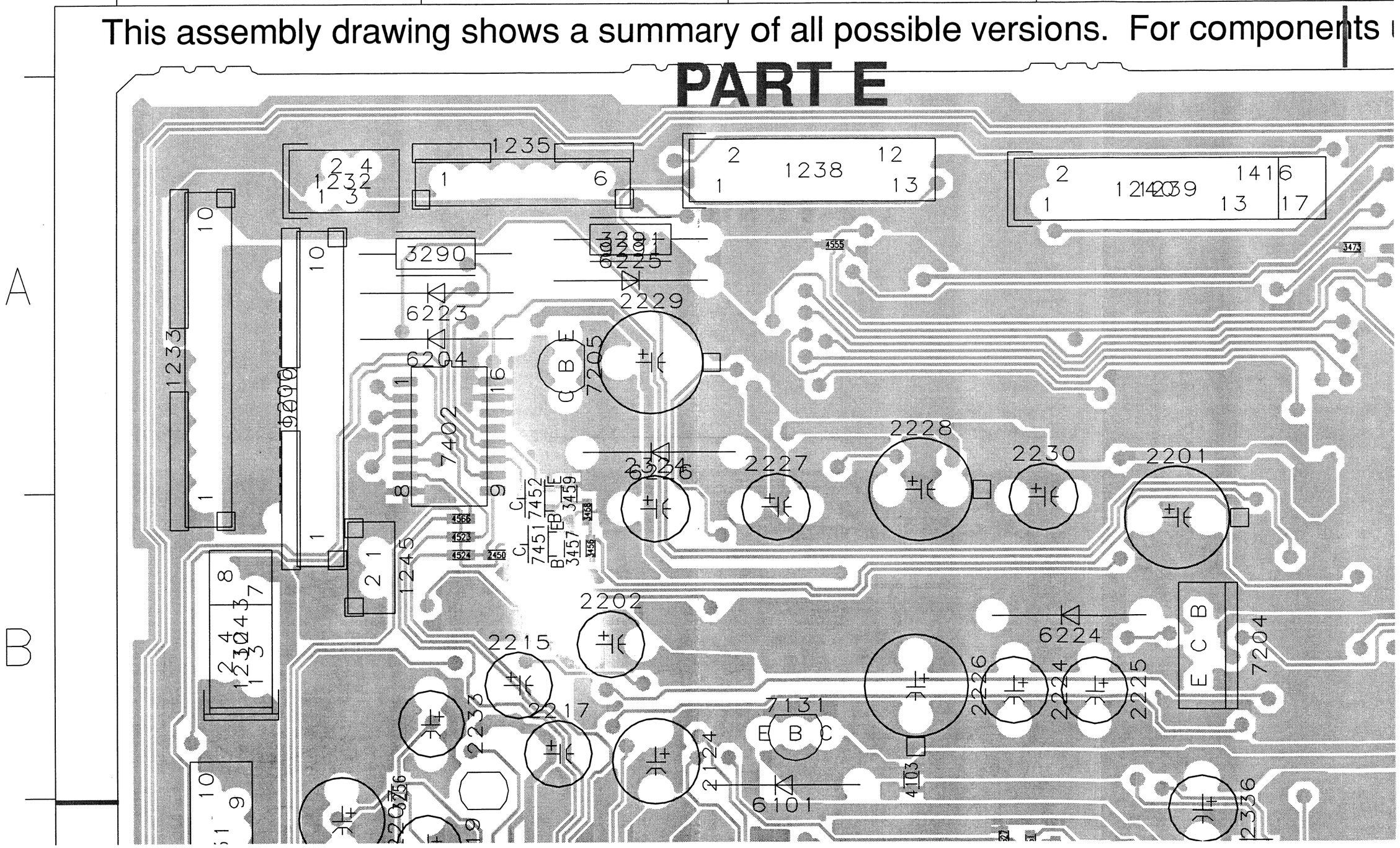
1100	B6	1238	A3	2154	C3	2208	C1	2228	A3	2381	D1	3125	C3	3239	C7	3457	B2	4105	D6	4533	C3	4570	B6	6225	A2	7206	D6	9011	B6
1145	C6	1239	A4	2155	C4	2209	C2	2229	A2	2382	D1	3126	C3	3240	C7	3458	B2	4106	D6	4535	C8	4572	B6	6226	A2	7208	C7	9012	D4
1182	D3	1240	A4	2158	C4	2210	C2	2230	A4	2394	C4	3153	D4	3256	B1	3459	B2	4118	C3	4537	C5	4573	B6	6227	C8	7210	C7	9013	D4
1183	D4	1241	B7	2159	C4	2211	C2	2231	D6	2395	C4	3155	D3	3257	C2	3460	C5	4125	D6	4538	D5	4575	C6	6228	C8	7211	C7	9014	C4
1184	D5	1242	B7	2166	D3	2212	C2	2232	C7	2420	C7	3156	D3	3272	C8	3461	C5	4126	D6	4545	D4	4653	D5	6404	D8	7230	C2	9016	B7
1186	D7	1243	B11	2185	D6	2213	C2	2233	B2	2421	C8	3180	D6	3273	C8	3462	C5	4330	D1	4550	C3	5201	B8	6405	D8	7252	C8	9017	C6
1187	D6	1245	B1	2185	D6	2214	C2	2240	B7	2430	C5	3182	D6	3274	C8	3463	D5	4382	D1	4551	C3	5202	B8	6406	D8	7253	C8	9020	D4
1200	A1	1401	B6	2186	D6	2215	B2	2241	B7	2431	D6	3183	D6	3275	C8	3464	D5	4401	A5	4552	C4	5232	C1	6407	D8	7301	C3	9021	D4
1201	C6	1403	B6	2187	C3	2216	D2	2242	C8	2432	D5	3230	D2	3276	C8	3465	D5	4522	D6	4553	C4	5401	A5	6408	D8	7402	A2	9108	C6
1230	B1	1404	B6	2188	C3	2217	B2	2311	C3	2433	D5	3231	C2	3277	C8	3466	D5	4523	B2	4554	D4	5402	D1	6409	D8	7422	C4	9291	A2
1231	C1	1405	B8	2190	C5	2218	C2	2313	C2	2434	D5	3232	C2	3290	A2	3467	D5	4524	B2	4555	A3	6101	C3	7100	D4	7431	C6		
1232	A1	1406	B8	2191	C5	2219	C2	2324	A2	2435	D6	3233	C2	3291	A2	3468	D5	4525	C3	4558	C4	6202	B7	7101	D3	7451	B2		
1233	A1	2102	C4	2196	C5	2220	C1	2329	D1	2436	D5	3234	D2	3302	D1	3472	D7	4527	C3	4559	C4	6203	B7	7131	B3	7452	B2		
1234	C1	2123	C5	2197	C5	2224	B4	2330	D1	2450	B2	3235	C2	3303	D2	3473	A5	4529	C4	4560	D6	6204	A2	7132	D5	7454	C5		
1235	A2	2124	B2	2201	A4	2225	B4	2336	C4	2451	D3	3236	C2	3330	D1	3480	D8	4530	C3	4562	C4	6205	C7	7150	D3	7455	D6		
1236	A5	2126	B5	2202	B2	2226	B3	2338	C4	3123	C3	3237	C2	3412	C6	4102	C3	4531	C3	4563	C4	6223	A2	7204	B4	7456	D5		
1237	A5	2130	C3	2207	C1	2227	A3	2380	D1	3124	C4	3238	C1	3456	B2	4103	B3	4532	C3	4566	B2	6224	B4	7205	A2	9010	A1		


This assembly drawing shows a summary of all possible versions. For components used in a specific versions see schematics diagram and respective parts list.
PART E
PART F
PART G
PART H
3139 113 3500p6 dd wk406

9-3b

COMPONENT & CHIP LAYOUT - COMPONENT SIDE VIEW (pcb layout ... 35006) PART E

This assembly drawing shows a summary of all possible versions. For components



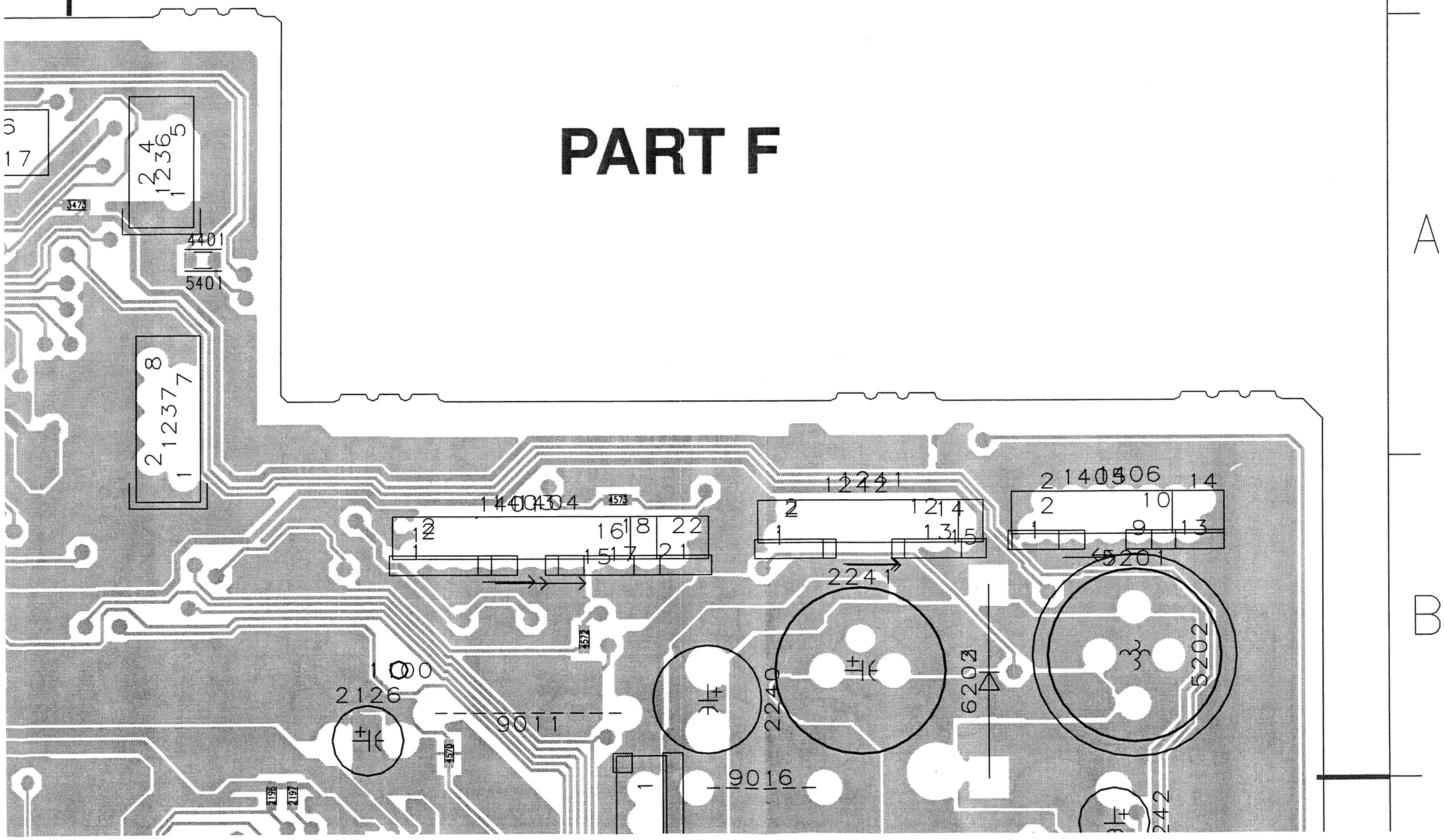
9-3c

COMPONENT & CHIP LAYOUT - COMPONENT SIDE VIEW (pcb layout ... 35006) PART F

5 6 7 8

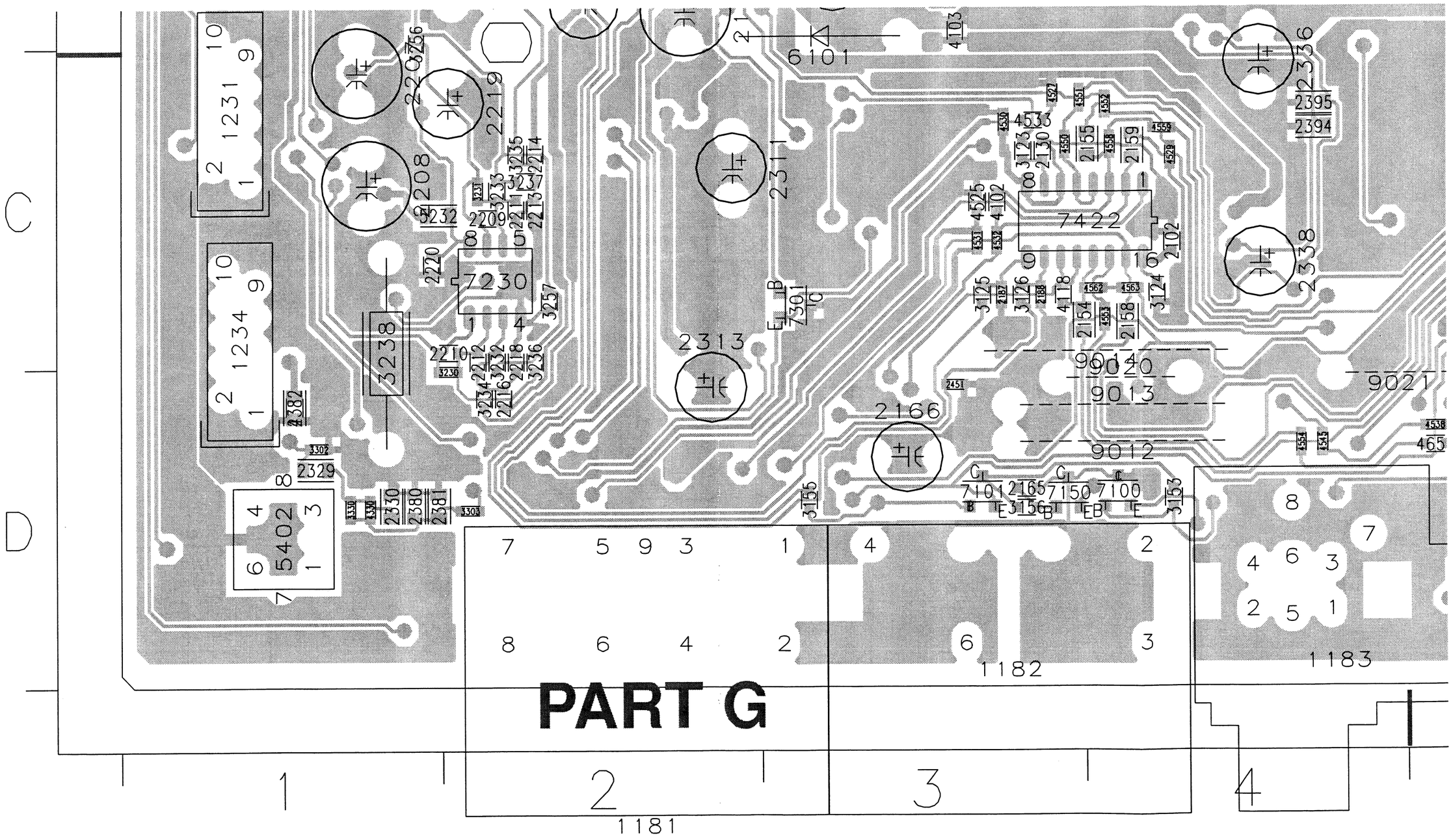
onents used in a specific versions see schematics diagram and respective parts list.

PART F



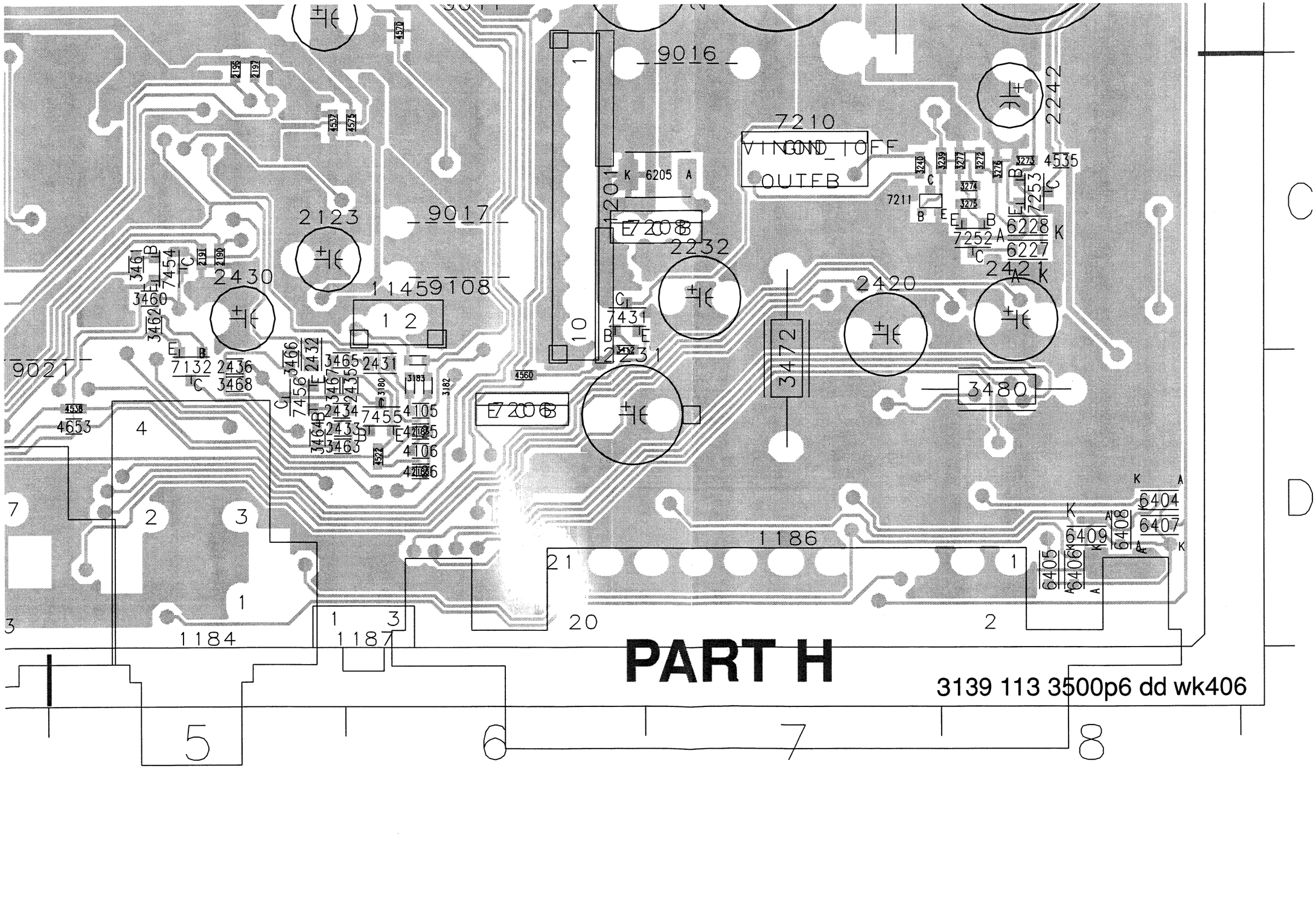
9-3d

COMPONENT & CHIP LAYOUT - COMPONENT SIDE VIEW (pcb layout ... 35006) PART G



9-3e

COMPONENT & CHIP LAYOUT - COMPONENT SIDE VIEW (pcb layout ... 35006) PART H



9-4

INPUT, SOURCE SELECT & VOLUME CONTROL L/R CIRCUIT

Version	3160
MX 3900/3950D/37	1K
MX 5500/5600/5700D _non KARA	2K2
MX 5500/5600/5700D _non KARA_SCART	3K3
MX 5500/5600/5700D _KARA	4K7
MX 5800/5900SA _non KARA	5K6
MX 5800/5900SA _non KARA_SCART	6K8
MX 5800/5900SA _KARA	8K2

7422 : TRUTH_TABLE

INPUT_SEL_1	INPUT_SEL_2	MUX_OUT
LOW	LOW	TV_IN
LOW	HIGH	SCART_TV_IN
HIGH	LOW	AUX_IN
HIGH	HIGH	---

1100 C8	3160 A9
1152 B1	3161 D7
1181-1 G1	3162 B5
1181-2 G1	3163 G3
1181-5 H1	3164 G3
1182-A I2	3165 E3
1182-B F2	3166 F3
1237 B2	3170 I5
2100 E13	3180 G13
2101 F13	3182 I13
2102 A13	4102 F4
2103 F13	4103 C8
2104 F13	4104 D8
2105 E12	4105 D9
2106 D11	4106 G9
2107 C11	4107 B2
2108 D11	4108 B2
2109 G3	4109 B2
2110 D10	4110 B2
2111 D10	4111 B3
2112 D10	4112 B2
2113 C9	4113 C2
2114 G12	4114 C3
2115 G11	4115 C3
2116 G11	4118 E4
2117 G11	4121 C2
2118 G11	4122 C2
2119 H10	4123 C2
2120 G10	4124 C2
2121 I9	4180 H13
2122 E8	4181 I13
2123 E8	4191 B8
2124 E7	4192 B8
2125 E7	4195 H2
2126 C7	6101 E7
2127 G3	7100 H4
2129 F13	7130 D9
2130 D13	7131 D7
2136 A3	7132 H5
2139 B5	7133 I5
2143 B5	7150 I4
2144 F2	7160 A4
2145 F2	7422 B13
2150 D3	
2151 D3	
2152 E2	
2153 E3	
2154 E4	
2155 F4	
2156 F3	
2157 F3	
2158 G4	
2159 G4	
2160 G2	
2161 G2	
2162 H5	
2163 H3	
2164 H4	
2165 I4	
2166 I5	
2167 I5	
2168 I3	
2169 A4	
2170 D11	
2171 H2	
2172 E1	
2173 E1	
2174 H1	
2199 F9	
3100 E13	
3101 F12	
3102 E13	
3103 F13	
3104 D12	
3105 D11	
3106 C10	
3107 C10	
3108 D10	
3109 C9	
3110 D2	
3111 H12	
3112 H11	
3113 H10	
3114 G10	
3115 H10	
3116 H9	
3117 E2	
3122 D2	
3123 D13	
3124 A13	
3125 A13	
3126 A14	
3127 B5	
3128 B5	
3129 B5	
3130 B4	
3131 C4	
3132 C4	
3133 C4	
3137 E3	
3140 F4	
3142 E3	
3143 F3	
3145 F3	
3146 G3	
3147 G4	
3148 G3	
3149 G3	
3150 H5	
3151 H3	
3152 H3	
3153 H4	
3154 H5	
3155 H5	
3156 I4	
3157 I5	
3158 I3	
3159 I3	

@ For i6000 only

Provision

9-4a

NPUT, SOURCE SELECT & VOLUME CONTROL L/R CIRCUIT (For pcb layout ... 35006)

For Production identification only

Version	3160
MX 3900/3950D/37	1K
MX 5500D/37	2K2
MX 5600D/37	3K3
MX 5500D/22	4K7
MX 5800/5700D/22	5K6
MX 5500/21/33/35	6K8
MX 5600/5700D/21/33/35	8K2

7422 : TRUTH_TABLE

INPUT_SEL_1	INPUT_SEL_0	MUX_OUT
LOW	LOW	TV_IN
LOW	HIGH	SCART_TV_IN
HIGH	LOW	AUX_IN
HIGH	HIGH	---

TV IN

AUX IN

LINE OUT

VOL_Left

VOL_Right

VU meter version

*2199 For Kore versions only

@ For i6000 only

Provision

3139 113 3500p6_04 dd wk0405

1100 C8	3132 C4	
1145 C2	3133 C4	
1181-1 G1	3137 E3	
1181-2 G1	3140 F4	
1181-5 H1	3142 E3	
1182-A I1	3143 F3	
1182-B F2	3145 F3	
1237 B2	3146 G3	
2100 E13	3147 G4	
2101 F13	3148 G3	
2102 A13	3149 G3	
2103 F13	3150 H5	
2104 F13	3151 H3	
2105 E12	3152 H3	
2106 D11	3153 H4	
2107 C11	3154 H5	
2108 D11	3155 H5	
2109 G3	3156 I4	
2110 D10	3157 I5	
2111 D10	3158 I3	
2112 D10	3159 I3	
2113 C9	3160 A9	
2114 G12	3161 D7	
2115 G11	3162 B4	
2116 G11	3163 G3	
2117 G11	3164 G3	
2118 G10	3165 E3	
2119 H10	3166 F3	
2120 G10	3170 I5	
2121 I9	3180 G13	
2122 E8	3182 H13	
2123 E8	3183 H13	
2124 E7	4102 F4	
2125 E7	4103 C8	
2126 C7	4104 D8	
2127 G3	4105 D9	
2129 F13	4106 G9	
2130 D13	4118 E4	
2136 B3	4119 C9	
2139 B5	4120 H9	
2143 B5	4125 D14	
2144 F2	4126 C14	
2145 F2	4191 B8	
2150 D3	4192 B8	
2151 D3	4193 C2	
2152 E2	4194 C2	
2153 E3	4195 H2	
2154 E4	4196 H1	
2155 F4	6101 E7	
2156 F3	6123 E8	
2157 F3	7100 H4	
2158 G4	7101 H5	
2159 G4	7131 D7	
2160 G2	7133 I5	
2161 G2	7150 I4	
2162 H5	7422 B13	
2163 H3		
2164 H4		
2165 I4		
2166 I5		
2167 I5		
2168 I3		
2170 D11		
2171 H2		
2172 E1		
2173 E1		
2174 H1		
2179 C9		
2180 H9		
2181 G5		
2182 G5		
2183 I5		
2184 I5		
2185 C14		
2186 B14		
2187 A14		
2188 A14		
2190 G6		
2191 G7		
2192 G7		
2193 G7		
2194 G7		
2195 G8		
2196 G8		
2197 G8		
2198 G9		
2199 F8		
3100 E13		
3101 F12		
3102 E13		
3103 F13		
3104 D12		
3105 D11		
3106 C10		
3107 C10		
3108 D10		
3109 C9		
3110 D2		
3111 H12		
3112 H11		
3113 H10		
3114 G10		
3115 H10		
3116 H9		
3117 E2		
3122 D2		
3123 D13		
3124 A13		
3125 A13		
3126 A14		
3127 B5		
3128 B5		
3129 B5		
3130 B4		
3131 C4		

9-5

PRE-AMPLIFIER, SUPPLY & INTERCONNECTION CIRCUIT

1200 F9 1201 F9 1230 B9 1231 D10 1232 C10 1233 F9 1235 A11 1236 B10 1238 G12 1239 D12 1240 D12 1241 B12 1242 A13 1243 B9 1244 G12 1245 D13 1246 A12 2201 A1 2202 B6 2207 D3 2208 F3 2209 E2 2210 F2 2211 D2 2212 F2 2213 C1 2214 D1 2215 D1 2216 F1 2217 F1 2218 G1 2219 G2 2220 G3 2224 G6 2225 H5 2226 G5 2227 F8 2228 I2 2229 I1 2230 H2 2231 I9 2232 G8 2233 C1 2240 I5 2241 H6 2242 F6 2254 H7 2280 D9 2281 D9 3200 A2 3201 A2 3202 I6 3203 B7 3204 B7 3205 B6 3206 B6 3207 B5 3208 B5 3209 A5 3210 B5 3211 A4 3212 C4 3213 A4 3214 C4 3215 H7 3224 D8 3225 D8 3230 E2 3231 E2 3232 G1 3233 E1 3234 F1 3235 D1 3236 F1 3237 D1 3238 G3 3239 I7 3240 H5 3243 H2 3244 H1 3245 H9 3250 I9 3252 G7 3254 H7 3256 C2 3257 C2 3259 G5 3260 I8 3261 H6 3262 H9 3263 H9 3265 G5 3268 H9 3269 G7 3270 E9 3271 E9 3272 F5 3273 F6 3274 E5 3275 E5 3276 F5 3277 F5 3290 A10 3291 A10 4200 G11 4201 F11 4202 F13 4203 F13 4204 H13 4205 B12 4206 D9 4280 E9 5201 H6 5202 H6 5232 G3 6200 A2 6201 A2 6202 H6 6203 H6 6204 H1 6205 G8 6223 G4 6224 H5 6225 F7 6226 I2 6227 F5 6228 F5 7200 A4 7204 G5 7205 H2 7206 H9 7207 I9 7208 G7 7209 H7 7210 H5 7211 I7 7230 E3 7231 A5 7232 A6 7233 B7 7250 B4 7252 E5 7253 F6 9291 A10

1 2 3 4 5 6 7 8 9 10 11 12 13

A B C D E F G H I

+5V_MUTE_1 5.4V 6200 BAS316 +5V6
6201 BAS316 3200 100K +12A
2201 1m0 3201 100K GND_D

3213 47R 3211 33R 6.2V
7200 BC817-25 3209 1K 4.6V 7231 BC857B 4.6V 7232 BC847B 5.4V +5V_MUTE_1
3207 4K7 3205 1K
A_HP 3206 5K6 5.4V 7233 BC847B 3203 10K MUTE_HDPH
7250 BC817-25 3210 1K 3208 4K7 2202 10u 0.2V 3204 10K
GND_D
3214 47R 3212 33R 0.2V
LOW = MUTE (Headphone not inserted)

TO HDPH & MIC PCB
+12A MIC_OUT MIC MIC_DET HP_DET A_HP
1230 FE-BT-VK-N Non-Karaoke
1243 FE-BT-VK-N Karaoke

3290 40VAC 2R2 3291 2R2 9291 ~F1 ~F2 GND_D NTC 4.9V
1235 EH-B
TO MAINS TRANSFORMER

1236 FE-BT-VK-N
LPC GND_D +5V6_ECO +12M PWD_DN 5.6V
TO MAINS & ECO STBY PCB

FMN 1242
3.3V 3.3V 5.2V 11.9V 5.9V -5.2V
@ 1246 FMN # 1241
3V3_sense +C 4206 4205 +3V3 GND_D +5V_DVD +12V_DVD GND_M +5V -5V +12V_DVD
FMN-BTRK
TO DVD Module

+HP 3256 4K7 HPREF 5.9V 2233 100u 3257 4K7 A_HP A_HP
A_HP 2213 100p HPREF 3237 12K
1B_L 2215 22u 3235 220R 5.9V 2214 1n 2211 470p
GND_A 5.9V
HPREF 3233 6K8 2209 180p 3231 27K
HPREF 3236 6K8 2210 180p 3230 27K
1B_R 2217 22u 3234 220R 2216 1n 2212 470p
GND_A
HPREF 3232 12K
A_HP 2218 100p
5.9V 2207 47u 2208 47u
+HP 7230 NJM4556AM 8 VS+ 3 INA+ 2 INA- 5 INB+ 6 INB- 4 VS- O-A 1 O-B 7 A_HP
+HP 11.6V 5232 2u2 3238 10R +12A
2219 47u 2220 22n A_HP

AMP_L 3225 1K0 4280 # 2280 470n
AMP_R 3224 1K0 2281 470n 4281 #
Mounted with 470n for pr 3 board rework at Prod start
Res 3270 & 3271 out & shift to pin 16 and 6 of conn. 1232 for pr 3 board rework at Prod start
3270 470R 3271 470R A_HP A_HP
1231 FE-BT-VK-N
A_HP AMP_ON_LRCS AMP_C GND_C AMP_ON_LRCS FREQ_HOP NTC 4.9V
4.7V 4.7V
TO AMP PCB

FOR MX5XXX FOR MX39XX 1240 For i6000
1239 FE-BT-VK-N 1240 FE-BT-VK-N 1245 FE-BT-VK-N
A0 A1 A2 I2C_CLK3 GND_D I2C_CLK2 GND_D I2C_CLK1 GND_D I2C_DATA DVD_ON 4.8V DVD_5V 4.8V +5V6 5.6V GND_D -Vkk -32V -F1 -25V -F2 -25V
4201 4200 # 4202 +12M # 4203 VID_RGB
TO FRONT PCB

DVD_5V 4.8V 3275 68R 47K 3277 3274 6K8 4.6V BC857B 7252 BAS316 +3V3 3.3V 6K8 3272 6227 6228 BAS316 0.2V 7253 BC847B NTC 3276 1K0 3273 10K 2242 47u GND_D
+3V3 Over-Voltage Protection Short-Circuit Protection

1N4003GP 6225 +5V6 +5V 2227 22u GND_D

Prod start with BD438 with Heatsink and running change to BD2425 without heatsink
BD438 7204 -6.2V -6.8V 6223 40VAC 1N4003GP 2226 50V 100u 3259 6K2 3265 470R 22u 2224 2225 50V 22u BZX79-C6V8 6224
Diode Added for pr 3 board rework at Prod start
5.6V +5V6 BD438 7208 5.2V +5V_DVD 3252 5K6 5V 3208 220R 0.2V 7209 BC847BW 3254 47K 2254 470n 2232 220u 10V
Hi = ON DVD_5V 10K 3261

GND_D 7210 LM2576T-3.3 VIN OUT ON_/OFF FB GND 4 +3V3 3V3_sense 47K 3240 100u 3 BYV27-200 6202 BYV28-200-20 6203 2241 1m0 50V 3215 1K0
@ 5202 33u 5201 100u +3V3
7211 BC847BW 10K 3239 DVD_5V Hi = ON 3202 10K

+12M 12V BD438 7206 +12V_DVD 11.6V 3245 5K6 11.3V 3268 1K0 3263 1K0 3262 1K0 0.2V 7207 BC847BW 3260 47K 2231 470u 16V
DVD_ON 10K Hi = ON 3266

1232 FE-BT-VK-N
4.4V NTC GND_D 40VAC 5.9V PWD_DN
TO SUPPLY PCB

AV Board to AV Board Connection
EH-B 1200 EH-B 1201 1233 EH-B
+C 3.8V GND_D +5V6 GND_D GND_M GND_A +12A +12M
TO SUPPLY PCB

@ 1244 FE-BT-VK-N 1238 FE-BT-VK-N
TU_ENABLE TU_DATA GND_D TU_CLK TU_STEREO GND_D MUX_VU MUX_DET +5V6_ECO GND_D LPC MUTE_SCART_LO PWD_DN SD
FM_DET # 4204
9.0V 4.6V 5.6V
TO FRONT PCB

BC327-25 7205 -32.4V -Vkk 6204 40VAC 1N4003GP -33V 3243 2K2 3244 5K6 2229 50V 100u 2228 50V 100u 6226 BZX79-C33 2230 22u GND_D
For MX39... only

@ For i6000 only
# PROVISION

AV circuit 3139 118 35003 sheet 2 dd wk304

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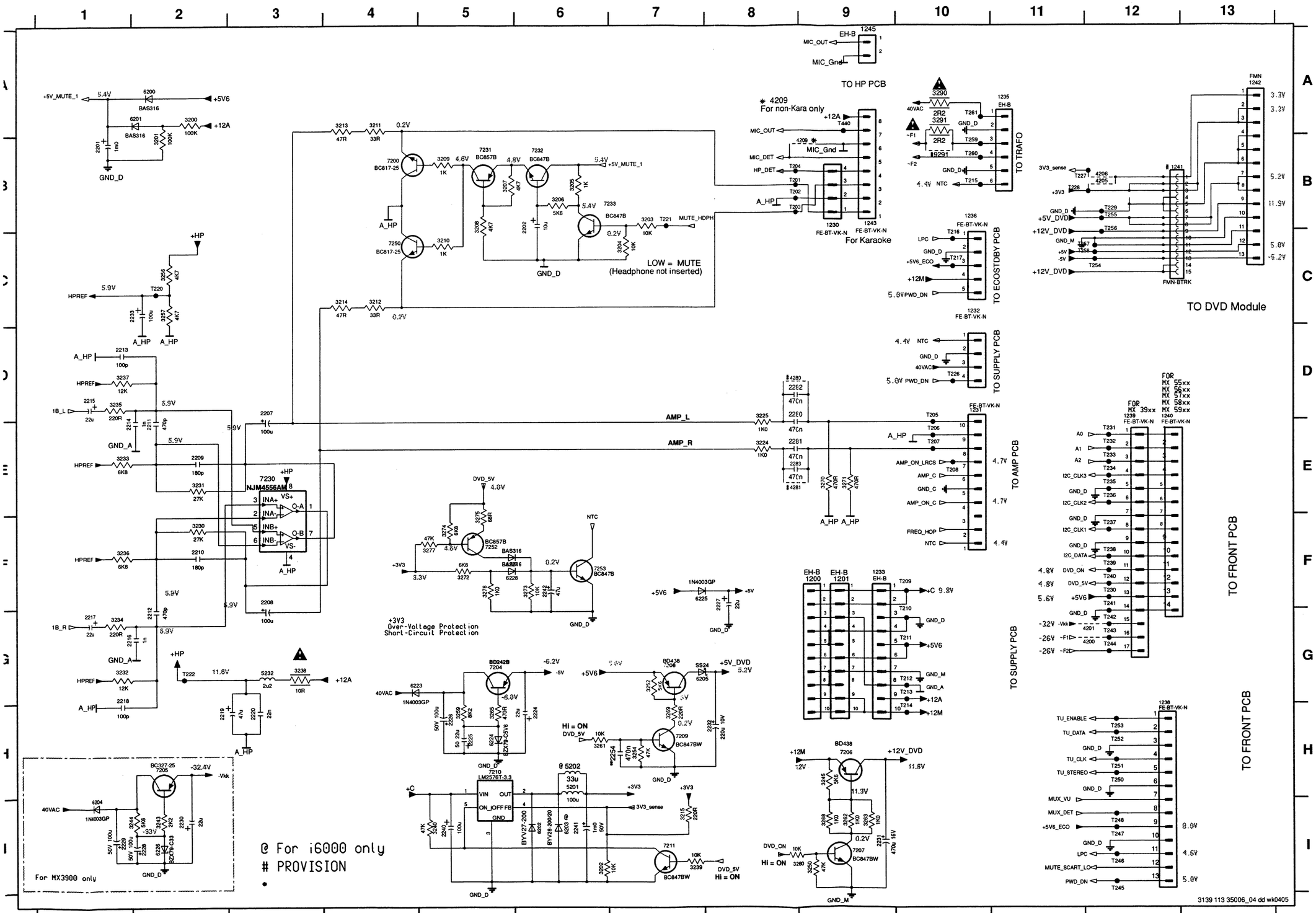
PRE-AMPLIFIER, SUPPLY & INTERCONNECTION CIRCUIT (For pcb layout ... 35006)



1200 F9	5201 H6	3205 B6	3229 B12
1201 F9	5202 H6	3206 B6	3230 F12
1230 B9	5232 G3	3207 B5	3231 E12
1231 D10	6200 A2	3208 B5	3232 G1
1232 C10	6201 A2	3209 B5	3233 E1
1233 F9	6202 I6	3210 C5	3234 G1
1235 A11	6203 I6	3211 A4	3235 D1
1236 B10	6204 I1	3212 C4	3236 F1
1238 H12	6205 G7	3213 A4	3237 D1
1239 D12	6223 G4	3214 C4	3238 G3
1240 D12	6224 H5	3215 I7	3239 I7
1241 B12	6225 F7	3224 E8	3240 I5
1242 A13	6226 I2	3225 D8	3243 I2
1243 B9	6227 F5	3230 F2	3244 I2
1245 A9	6228 F5	3231 E2	3245 H9
2201 B1	7200 B4	3232 G1	3250 I9
2202 B6	7204 G5	3233 E1	3252 G7
2207 D3	7205 H2	3234 G1	3254 H7
2208 F3	7206 H9	3235 D1	3256 C2
2209 E2	7207 I9	3236 F1	3257 C2
2210 F2	7208 G7	3237 D1	3259 H5
2211 E2	7209 H7	3238 G3	3260 I8
2212 G2	7210 H5	3239 I7	3261 H6
2213 D1	7211 I7	3240 I5	3262 I9
2214 E1	7230 E3	3243 I2	3263 I9
2215 D1	7231 B5	3244 I2	3265 H5
2216 G1	7232 B6	3245 H9	3268 I9
2217 G1	7233 B7	3250 I9	3269 H7
2218 G1	7250 C4	3252 G7	3270 E9
2219 H2	7252 F5	3254 H7	3271 E9
2220 H3	7253 F6	3256 C2	3272 F5
2224 H6	9291 B10	3257 C2	3273 F6
2225 H5	T201 B8	3259 H5	3274 F5
2226 H5	T202 B8	3260 I8	3275 F5
2227 F8	T203 B8	3261 H6	3276 F5
2228 I2	T204 B8	3262 I9	3277 F5
2229 I1	T205 D10	3263 I9	3290 A10
2230 I2	T206 E10	3265 H5	3291 A10
2231 I9	T207 E10	3268 I9	4200 G12
2232 H8	T208 E10	3269 H7	4201 G12
2233 C2	T209 F10	3270 E9	4205 B12
2240 I5	T210 G10	3271 E9	4206 B12
2241 I6	T211 G10	3272 F5	4209 B9
2242 F6	T212 G10	3273 F6	4280 D8
2254 H7	T213 G10	3274 F5	4281 E8
2280 D8	T214 H10	3275 F5	
2281 E8	T215 B10	3276 F5	
2282 D8	T216 C10	3277 F5	
2283 E8	T217 C10	3290 A10	
3200 A2	T220 C2	3291 A10	
3201 B2	T221 B7	4200 G12	
3202 I6	T222 G2	4201 G12	
3203 B7	T226 D10	4205 B12	
3204 C7	T227 B11	4206 B12	
3205 B6	T228 B11	4209 B9	
3206 B6	T229 B12	4280 D8	
3207 B5	T230 F12	4281 E8	
3208 B5	T231 E12		
3209 B5	T232 E12		
3210 C5	T233 E12		
3211 A4	T234 E12		
3212 C4	T235 E12		
3213 A4	T236 E12		
3214 C4	T237 F12		
3215 I7	T238 F12		
3224 E8	T239 F12		
3225 D8	T240 F12		
3230 F2	T241 F12		
3231 E2	T242 G12		
3232 G1	T243 G12		
3233 E1	T244 G12		
3234 G1	T245 I12		
3235 D1	T246 I12		
3236 F1	T247 I12		
3237 D1	T248 I12		
3238 G3	T250 H12		
3239 I7	T251 H12		
3240 I5	T252 H12		
3243 I2	T253 H12		
3244 I2	T254 C12		
3245 H9	T255 B12		
3250 I9	T256 C12		
3252 G7	T257 C11		
3254 H7	T258 C11		
3256 C2	T259 B10		
3257 C2	T260 B10		
3259 H5	T261 A10		
3260 I8	T440 A9		
3261 H6			
3262 I9			
3263 I9			
3265 H5			
3268 I9			
3269 H7			
3270 E9			
3271 E9			
3272 F5			
3273 F6			
3274 F5			
3275 F5			
3276 F5			
3277 F5			
3290 A10			
3291 A10			
4200 G12			
4201 G12			
4205 B12			
4206 B12			
4209 B9			
4280 D8			
4281 E8			

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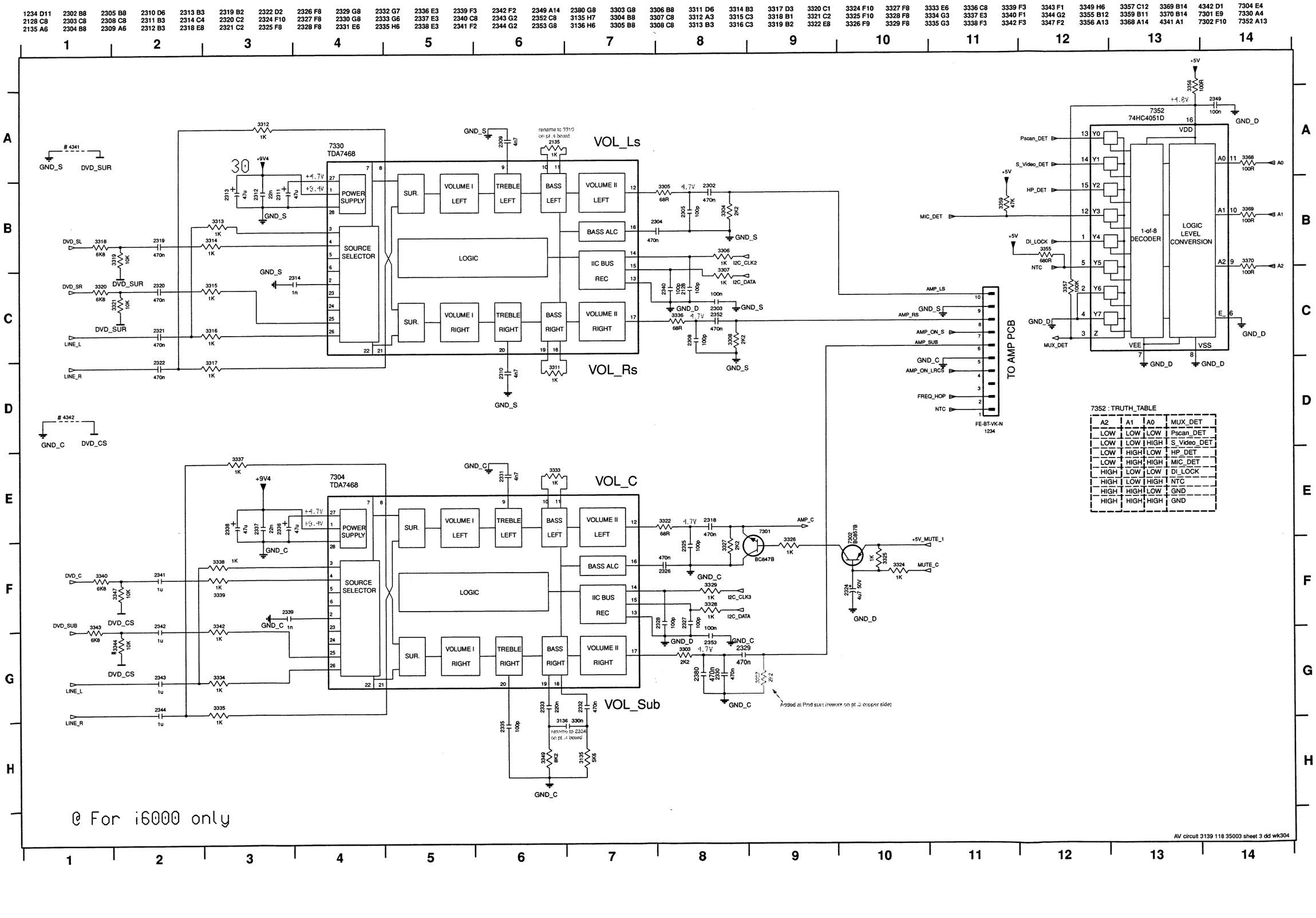
VOLUME CONTROL SURR., CENTER & SW AND CONTROL MULTIPLEXER CIRCUIT



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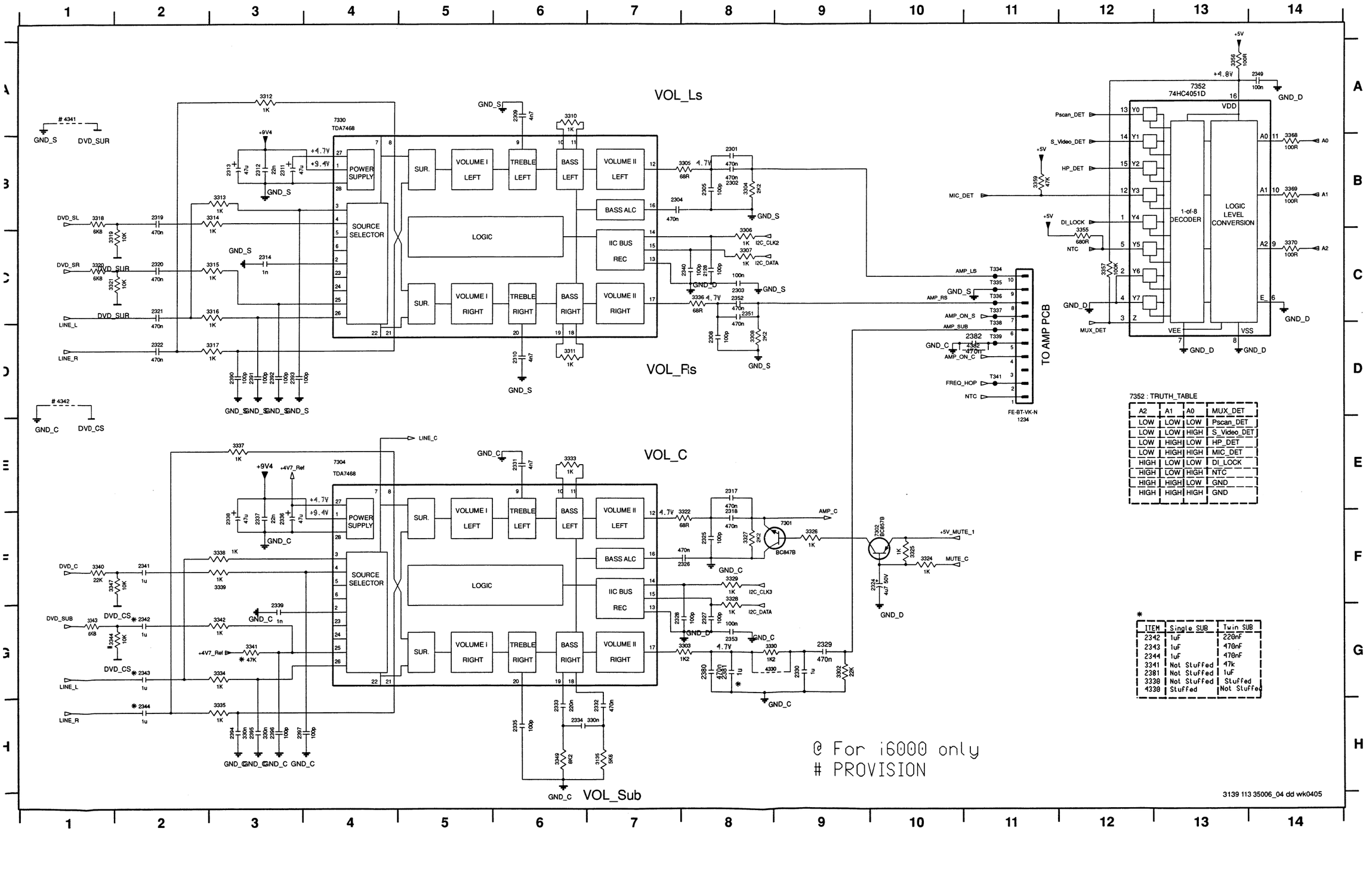
/OLUME CONTROL SURR., CENTER & SW AND CONTROL MULTIPLEXER CIRCUIT (For pcb layout ... 35006)

1234 E11 2303 C8 2309 A6 2313 B3 2319 B2 2324 F10 2328 G7 2332 H7 2336 F3 2340 C8 2344 H2 2353 G8 2390 D3 2394 H3 3135 H7 3305 B8 3310 A6 3314 B3 3318 B1 3322 F8 3327 F8 3333 E6 3337 E3 3341 G3 3347 F1 3357 C12 3370 C14 4382 D11 T335 C11 T339 D11
2128 C8 2304 B7 2310 D6 2314 C3 2320 C2 2325 F8 2329 G9 2333 H6 2337 F3 2341 F2 2349 A14 2380 G8 2391 D3 2395 H3 3302 G9 3306 C8 3311 D6 3315 C3 3319 C1 3324 F10 3328 F8 3334 G3 3338 F3 3342 G3 3349 H6 3359 B11 4330 G8 7301 F9 T336 C11 T341 D11
2301 B8 2305 B8 2311 B3 2317 E8 2321 C2 2326 F8 2330 G9 2334 H6 2338 F3 2342 G2 2351 C8 2381 G8 2392 D3 2396 H3 3303 G8 3307 C8 3312 A3 3316 C3 3320 C1 3325 F10 3329 F8 3335 H3 3339 F3 3343 G1 3347 G1 3355 C12 3368 B14 4341 A1 7302 F10 T337 C11
2302 B8 2308 D8 2312 B3 2318 F8 2322 D2 2327 G8 2331 E6 2335 H6 2339 G3 2343 G2 2352 C8 2382 D11 2393 D3 2397 H3 3304 B8 3308 D8 3313 B3 3317 D3 3321 C1 3326 F9 3330 G8 3336 C8 3340 F1 3344 G1 3356 A13 3369 B14 4342 D1 T334 C11 T338 D11



7352 : TRUTH_TABLE

A2	A1	A0	MUX_DET
LOW	LOW	LOW	Pscan_DET
LOW	LOW	HIGH	S_Video_DET
LOW	HIGH	LOW	HP_DET
LOW	HIGH	HIGH	MIC_DET
HIGH	LOW	LOW	DI_LOCK
HIGH	LOW	HIGH	NTC
HIGH	HIGH	LOW	GND
HIGH	HIGH	HIGH	GND

*

ITEM	Single SUB	Twin SUB
2342	1uF	220nF
2343	1uF	470nF
2344	1uF	470nF
3341	Not Stuffed	47k
2381	Not Stuffed	1uF
3338	Not Stuffed	Stuffed
4338	Stuffed	Not Stuffed

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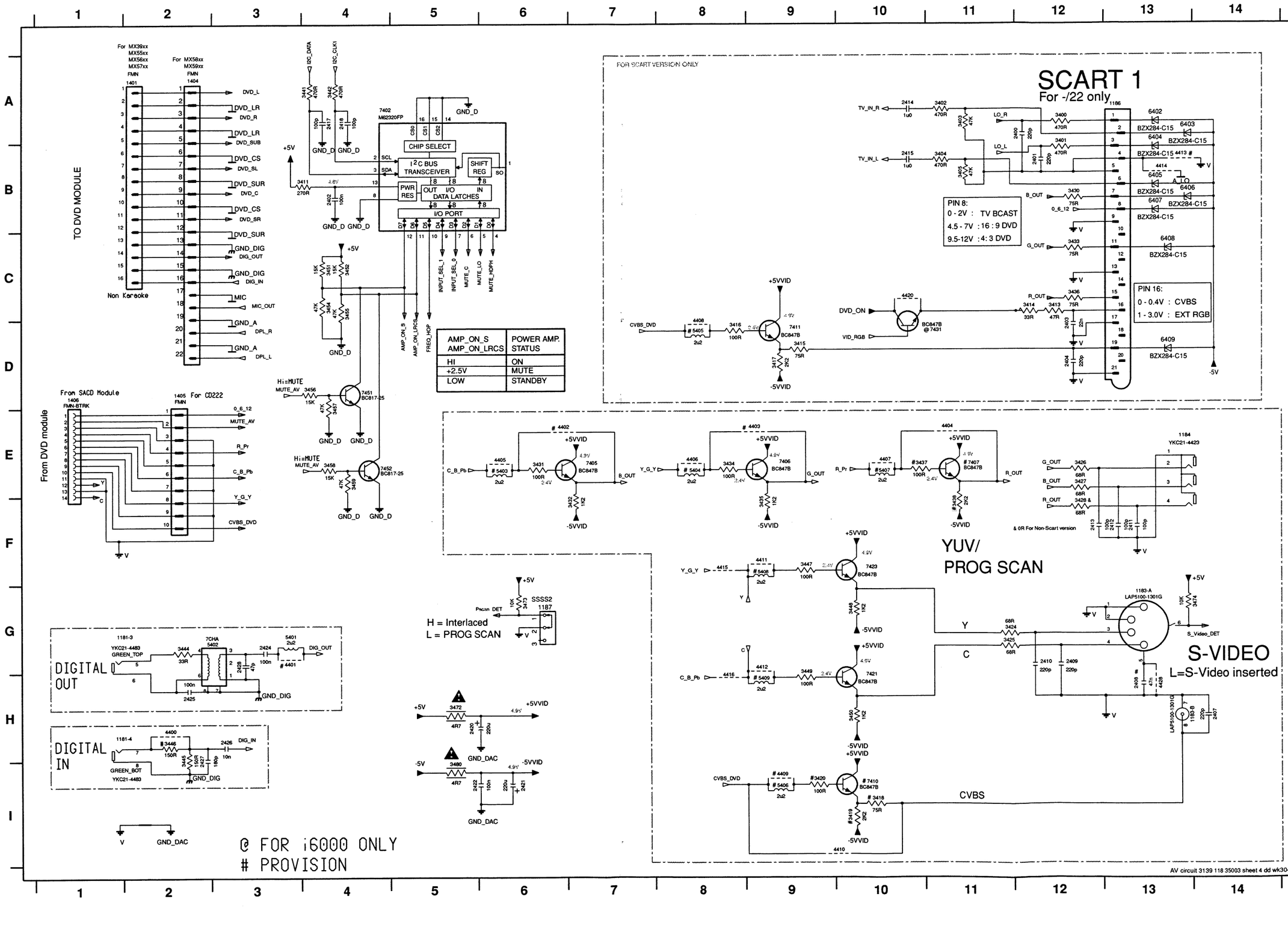
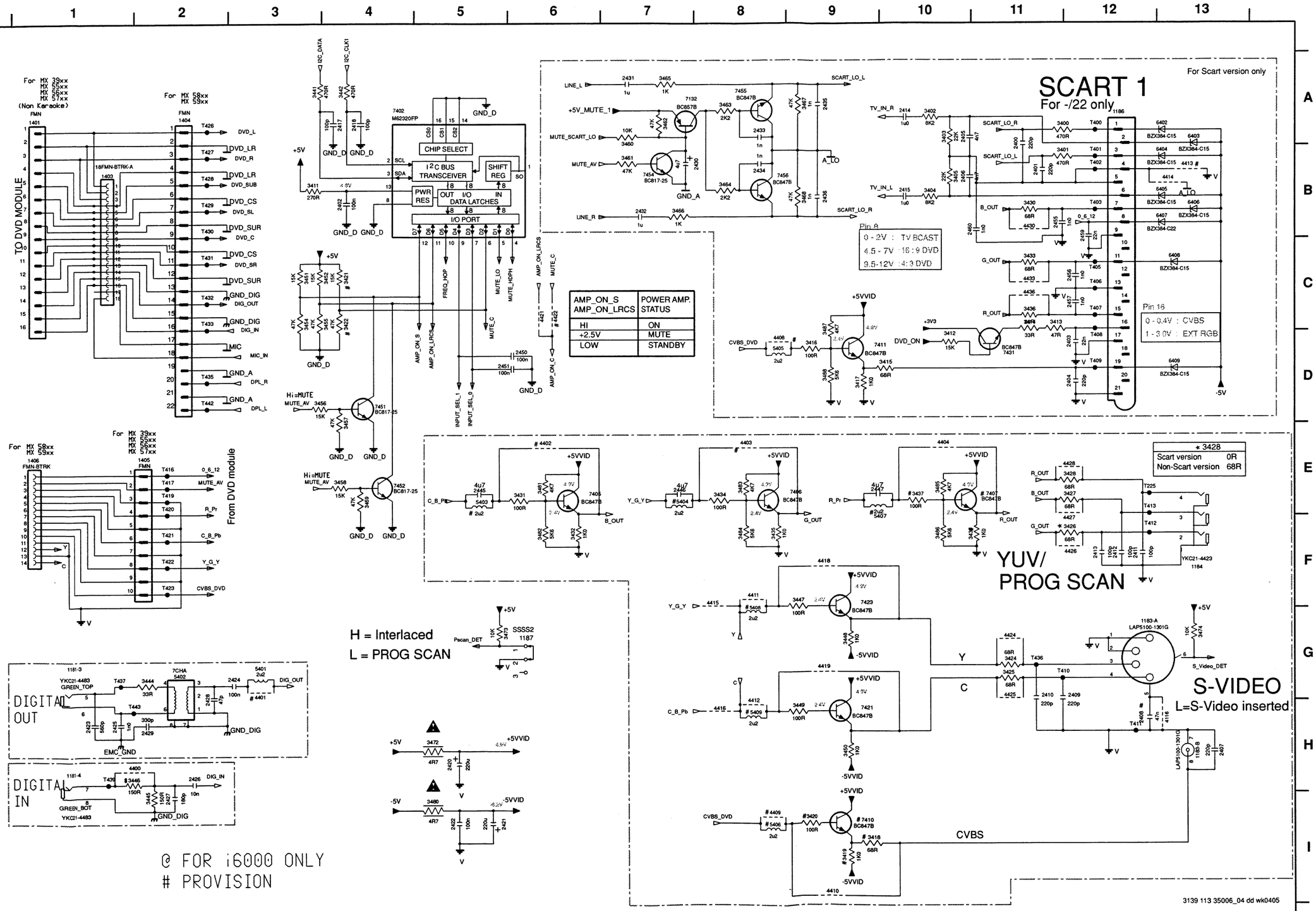
DIGITAL I/O, S-VIDEO, SCART, & I²C EXPANDER CIRCUITS

1181-3 G2, 1181-4 H2, 1183-A G13, 1183-B H13, 1184 E13, 1186 A13, 1187 G6, 1401 A2, 1404 A2, 1405 D2, 1406 D1, 2400 A12, 2401 B12, 2402 B4, 2403 D12, 2404 D12, 2407 H14, 2408 H13, 2409 G12, 2410 G12, 2411 F13, 2412 F13, 2413 F12, 2414 A10, 2415 B10, 2417 A4, 2418 A4, 2420 H5, 2421 I5, 2422 I5, 2424 G3, 2425 H2, 2426 H3, 2427 H2, 2428 G3, 3400 A12, 3401 B12, 3402 A11, 3403 A11, 3404 B11, 3405 B11, 3411 B4, 3413 C12, 3414 C12, 3415 D9, 3416 D8, 3417 D9, 3418 I10, 3419 I10, 3420 I9, 3424 G11, 3425 G11, 3426 E12, 3427 E12, 3428 F12, 3430 B12, 3431 E6, 3432 F7, 3433 C12, 3434 E8, 3435 F9, 3436 C12, 3437 E10, 3438 F11, 3441 A4, 3442 A4, 3444 G2, 3445 H2, 3446 H2, 3447 F9, 3448 G10, 3449 H9, 3450 H10, 3451 C4, 3452 C4, 3454 C4, 3455 C4, 3456 D4, 3457 D4, 3458 E4, 3459 E4, 3472 H5, 3473 G6, 3474 G14, 3480 I5, 4400 H2, 4401 G3, 4402 E6, 4403 E9, 4404 E11, 4405 E6, 4406 E8, 4407 E10, 4408 D8, 4409 I9, 4410 I10, 4411 F9, 4412 G9, 4413 B13, 4414 B13, 4415 F8, 4416 H8, 4420 C10, 4428 H13, 5401 G3, 5402 E6, 5404 E8, 5405 D8, 5406 I9, 5407 E10, 5408 F9, 5409 H9, 6402 A13, 6403 A13, 6404 A13, 6405 B13, 6406 B13, 6407 B13, 6408 C13, 6409 D13, 7401 A4, 7402 A4, 7405 E7, 7406 E9, 7407 E11, 7410 I10, 7411 D9, 7421 H10, 7423 F10, 7431 D11, 7451 D4, 7452 E4



9-7a

DIGITAL I/O, S-VIDEO, SCART, & I²C EXPANDER CIRCUITS (For pcb layout ... 35006)



1181-3 G1	3472 H5
1181-4 H1	3473 G5
1183-A G12	3474 G13
1183-B H13	3480 I5
1184 F13	3481 E6
1186 A12	3482 F6
1187 G6	3483 E8
1401 A1	3484 F8
1403 B1	3485 E10
1404 A2	3486 F10
1405 E2	3487 C9
1406 E1	3488 D9
2400 A11	4116 H13
2401 B11	4400 H1
2402 B4	4401 G3
2403 D12	4402 E6
2404 D12	4403 E8
2405 A10	4404 E10
2406 B10	4408 D8
2407 H13	4409 I8
2408 H12	4410 I9
2409 G12	4411 F8
2410 G11	4412 H8
2411 F12	4413 B13
2412 F12	4414 B13
2413 F12	4415 F8
2414 A10	4416 H8
2415 B10	4418 F9
2417 A4	4419 G9
2418 A4	4421 C6
2420 H5	4422 C6
2421 I5	4424 G11
2422 I5	4425 G11
2423 H1	4426 F12
2424 G3	4427 F12
2425 H1	4428 E12
2426 H2	4430 B11
2427 I2	4433 C11
2428 G2	4436 C11
2429 H2	5401 G3
2430 B8	5402 G2
2431 A7	5403 E5
2432 B7	5404 E7
2433 A8	5405 D8
2434 B8	5406 I8
2435 A9	5407 F10
2436 B9	5408 G8
2445 E5	5409 H8
2446 E7	6402 A13
2447 E9	6403 A13
2450 D6	6404 B13
2451 D5	6405 B13
2455 B11	6406 B13
2456 C12	6407 B13
2457 C12	6408 C13
2459 B12	6409 D13
2460 B11	7132 A8
3400 A11	7402 A4
3401 B11	7405 E6
3402 A10	7406 E9
3403 A10	7407 E11
3404 B10	7410 I9
3405 B10	7411 D9
3411 B3	7421 H9
3412 D10	7423 F9
3413 C11	7431 D11
3414 C11	7451 D4
3415 D10	7452 E4
3416 D9	7454 B7
3417 D9	7455 A8
3418 I9	7456 B8
3419 I9	T225 E12
3420 I9	T400 A12
3421 C4	T401 B12
3422 C4	T402 B12
3424 G11	T403 B12
3425 G11	T405 C12
3426 F12	T406 C12
3427 E12	T407 C12
3428 E12	T408 D12
3430 B11	T409 D12
3431 E6	T410 G11
3432 F6	T411 H12
3433 C11	T412 F12
3434 E8	T413 E12
3435 F8	T416 E2
3436 C11	T417 E2
3437 E10	T419 E2
3438 F11	T420 E2
3441 A3	T421 F2
3442 A4	T422 F2
3444 G2	T423 F2
3445 I2	T426 A2
3446 H1	T427 B2
3447 F9	T428 B2
3448 G9	T429 B2
3449 H9	T430 B2
3450 H9	T431 C2
3451 C3	T432 C2
3452 C4	T433 C2
3454 C3	T435 D2
3455 C4	T436 G11
3456 D3	T437 G1
3457 D4	T439 H1
3458 E4	T442 D2
3459 E4	T443 H1
3460 A7	
3461 B7	
3462 A7	
3463 A8	
3464 B8	
3465 A7	
3466 B7	
3467 A9	
3468 B9	

ELECTRICAL PARTS LIST - AV BOARD

MISCELLANEOUS

1181	2422 026 05399	Socket Cinch Dig-out/Aux-in
1182	4822 267 31823	Socket Cinch TV-in/Line-out
1183	2422 033 00468	Socket CVBS/S-Video Out
1184	2422 026 05342	Socket YUV Out
1187	2422 127 00476	Switch Pro-SCAN
1230	4822 267 10733	FFC Socket 4P Vert.
1231	4822 267 10729	FFC Socket 10P Vert.
1232	4822 267 10733	FFC Socket 4P Vert.
1234	4822 267 10729	FFC Socket 10P Vert.
1236	4822 267 10954	FFC Socket 5P Vert.
1237	4822 265 11515	FFC Socket 8P Vert.
1238	4822 267 10738	FFC Socket 13P Vert.
1239	4822 267 10871	FFC Socket 17P Vert.
1242	2422 025 16591	FFC Socket 13P Vert.
1401	2422 025 16525	FFC Socket 16P Vert.
1405	2422 025 16587	FFC Socket 10P Vert.

CAPACITORS

2100	3198 016 31020	1nF 10% 25V
2101	3198 016 31020	1nF 10% 25V
2102	2238 586 59812	100nF 10% 50V
2103	2020 552 94427	100pF 5% 50V
2104	2020 552 94427	100pF 5% 50V
2105	3198 017 44740	470nF 10V
2106	3198 017 44740	470nF 10V
2107	2020 552 96327	330nF 10% 16V
2108	4822 126 13879	220nF +80/-20% 16V
2109	2020 552 94427	100pF 5% 50V
2110	5322 126 11579	3,3nF 10% 63V
2111	3198 016 31020	1nF 10% 25V
2112	5322 126 11583	10nF 10% 50V
2113	3198 017 44740	470nF 10V
2114	3198 017 44740	470nF 10V
2115	2020 552 96327	330nF 10% 16V
2116	4822 126 13879	220nF +80/-20% 16V
2117	4822 126 14238	2,2nF 50V
2118	5322 126 11579	3,3nF 10% 63V
2119	3198 016 31020	1nF 10% 25V
2120	5322 126 11583	10nF 10% 50V
2121	3198 017 44740	470nF 10V
2122	4822 126 14494	22nF 10% 25V
2123	4822 124 81151	22uF 20% 50V
2124	4822 124 40196	220uF 20% 16V
2125	4822 126 14238	2,2nF 50V
2126	4822 124 40433	47uF 20% 25V
2127	2020 552 94427	100pF 5% 50V
2128	2020 552 94427	100pF 5% 50V
2129	2238 586 59812	100nF 10% 50V
2130	2238 586 59812	100nF 10% 50V
2135	Refer to resistor 3310	
2136	2238 586 59812	100nF 10% 50V
2139	2238 586 59812	100nF 10% 50V
2143	2238 586 59812	100nF 10% 50V
2144	4822 126 13956	68pF 5% 63V
2145	4822 126 13956	68pF 5% 63V
2150	4822 126 14043	1uF +80/-20% 16V
2151	4822 126 14043	1uF +80/-20% 16V
2152	3198 016 38210	820pF 10% 25V
2153	3198 016 38210	820pF 10% 25V
2154	4822 126 14043	1uF +80/-20% 16V
2155	4822 126 14043	1uF +80/-20% 16V
2156	2020 552 94427	100pF 5% 50V
2157	2020 552 94427	100pF 5% 50V
2160	4822 126 13956	68pF 5% 63V
2161	4822 126 13956	68pF 5% 63V
2162	4822 126 14491	2,2uF +80/-20% 10V
2163	3198 016 31020	1nF 10% 25V
2164	3198 016 31020	1nF 10% 25V
2165	3198 016 31020	1nF 10% 25V
2166	4822 124 40769	4,7uF 20% 100V
2167	4822 126 14491	2,2uF +80/-20% 10V
2168	3198 016 31020	1nF 10% 25V
2170	4822 126 14238	2,2nF 50V
2172	3198 017 34730	47nF 16V
2173	3198 017 34730	47nF 16V
2187	2238 586 59812	100nF 10% 50V
2188	2238 586 59812	100nF 10% 50V
2190	2020 552 94427	100pF 5% 50V
2191	2020 552 94427	100pF 5% 50V
2192	2020 552 94427	100pF 5% 50V
2193	2020 552 94427	100pF 5% 50V
2194	2020 552 94427	100pF 5% 50V
2195	2020 552 94427	100pF 5% 50V
2196	2020 552 94427	100pF 5% 50V
2197	2020 552 94427	100pF 5% 50V
2198	2020 552 94427	100pF 5% 50V
2201	4822 124 40184	1000uF 20% 10V
2202	4822 124 40248	10uF 20% 63V
2207	4822 124 41751	47uF 20% 50V
2208	4822 124 41751	47uF 20% 50V
2209	4822 126 14508	180pF 5% 50V
2210	4822 126 14508	180pF 5% 50V
2211	4822 126 13881	470pF 5% 50V
2212	4822 126 13881	470pF 5% 50V
2213	2020 552 94427	100pF 5% 50V
2214	3198 016 31020	1nF 10% 25V
2215	4822 124 81151	22uF 20% 50V
2216	3198 016 31020	1nF 10% 25V
2217	4822 124 81151	22uF 20% 50V
2218	2020 552 94427	100pF 5% 50V
2219	4822 124 40433	47uF 20% 25V
2220	4822 126 14494	22nF 10% 25V
2224	4822 124 81151	22uF 20% 50V
2225	4822 124 81151	22uF 20% 50V

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ELECTRICAL PARTS LIST - AV BOARD

2226	4822 124 40255	100uF 20% 63V
2227	4822 124 81151	22uF 20% 50V
2228	4822 124 40255	100uF 20% 63V
2229	4822 124 40255	100uF 20% 63V
2230	4822 124 81151	22uF 20% 50V
2231	4822 124 80791	470uF 20% 16V
2232	4822 124 40196	220uF 20% 16V
2233	4822 124 41584	100uF 20% 10V
2240	2020 012 93583	100uF 20% 25V
2241	3198 026 51020	1000uF 20% 50V
2242	4822 124 40433	47uF 20% 25V
2254	3198 017 44740	470nF 10V
2280	3198 017 44740	470nF 10V
2281	3198 017 44740	470nF 10V
2282	3198 017 44740	470nF 10V
2283	3198 017 44740	470nF 10V
2302	3198 017 44740	470nF 10V
2303	2238 586 59812	100nF 10% 50V
2304	3198 017 44740	470nF 10V
2305	2020 552 94427	100pF 5% 50V
2308	2020 552 94427	100pF 5% 50V
2309	4822 126 13193	4,7nF 10% 63V
2310	4822 126 13193	4,7nF 10% 63V
2311	4822 124 40433	47uF 20% 25V
2312	4822 126 14494	22nF 10% 25V
2313	4822 124 40433	47uF 20% 25V
2314	3198 016 31020	1nF 10% 25V
2318	3198 017 41050	1uF +80/-20% 10V
2319	3198 017 44740	470nF 10V
2320	3198 017 44740	470nF 10V
2321	3198 017 44740	470nF 10V
2322	3198 017 44740	470nF 10V
2324	4822 124 12032	4,7uF 20% 50V
2325	2020 552 94427	100pF 5% 50V
2326	3198 017 44740	470nF 10V
2327	2020 552 94427	100pF 5% 50V
2328	2020 552 94427	100pF 5% 50V
2329	2020 552 96684	470nF 10% 16V
2330	4822 126 14472	1uF 10% 10V
2331	4822 126 13193	4,7nF 10% 63V
2332	2020 552 96684	470nF 10% 25V
2333	2020 552 96326	220nF 10% 16V
2334	2222 780 15656	330nF 10% 16V
2335	2020 552 94427	100pF 5% 50V
2336	4822 124 40433	47uF 20% 25V
2337	4822 126 14494	22nF 10% 25V
2338	4822 124 40433	47uF 20% 25V
2339	3198 016 31020	1nF 10% 25V
2340	2020 552 94427	100pF 5% 50V
2341	4822 126 14043	1uF +80/-20% 16V
2342	4822 126 14043	1uF +80/-20% 16V
2343	4822 126 14043	1uF +80/-20% 16V
2344	4822 126 14043	1uF +80/-20% 16V
2349	2238 586 59812	100nF 10% 50V
2352	3198 017 41050	1uF +80/-20% 10V
2353	2238 586 59812	100nF 10% 50V
2380	2020 552 96684	470nF 10% 25V
2390	2020 552 94427	100pF 5% 50V
2391	2020 552 94427	100pF 5% 50V
2392	2020 552 94427	100pF 5% 50V
2393	2020 552 94427	100pF 5% 50V
2394	2020 552 94427	100pF 5% 50V
2395	2020 552 94427	100pF 5% 50V
2396	2020 552 94427	100pF 5% 50V
2397	2020 552 94427	100pF 5% 50V
2402	2238 586 59812	100nF 10% 50V
2407	4822 126 13883	220pF 5% 50V
2409	4822 126 13883	220pF 5% 50V
2410	4822 126 13883	220pF 5% 50V
2411	2020 552 94427	100pF 5% 50V
2412	2020 552 94427	100pF 5% 50V
2413	2020 552 94427	100pF 5% 50V
2417	2020 552 94427	100pF 5% 50V
2418	2020 552 94427	100pF 5% 50V
2420	4822 124 40196	220uF 20% 16V
2421	4822 124 40196	220uF 20% 16V
2422	2238 586 59812	100nF 10% 50V
2423	4822 126 14249	560pF 25V
2424	2238 586 59812	100nF 10% 50V
2425	3198 016 31020	1nF 50V
2426	5322 126 11583	10nF 10% 50V
2427	4822 126 14508	180pF 5% 50V
2428	4822 126 11785	47pF 5% 50V
2429	4822 126 14241	330pF 50V
2445	2020 552 96305	4,7uF +80/-20% 10V
2446	2020 552 96305	4,7uF +80/-20% 10V
2450	2238 586 59812	100nF 10% 50V
2451	2238 586 59812	100nF 10% 50V

RESISTORS

3100	4822 051 30221	220R 5% 0,062W
3101	4822 051 30221	220R 5% 0,062W
3102	4822 051 30102	1k 5% 0,062W
3103	4822 051 30102	1k 5% 0,062W
3104	4822 051 30562	5k6 5% 0,063W
3105	4822 117 12902	8k2 1% 0,063W
3106	4822 051 30562	5k6 5% 0,063W
3107	4822 051 30183	18k 5% 0,062W
3108	4822 051 30103	10k 5% 0,062W
3109	4822 117 12925	47k 1% 0,063W
3110	4822 051 30682	6k8 5% 0,062W
3111	4822 051 30562	5k6 5% 0,063W
3112	4822 117 12902	8k2 1% 0,063W
3113	4822 051 30183	18k 5% 0,062W

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ELECTRICAL PARTS LIST - AV BOARD

ELECTRICAL PARTS LIST - AV BOARD

RESISTORS

R114	4822 051 30103	10k 5% 0,062W
R115	4822 051 30562	5k6 5% 0,063W
R116	4822 117 12925	47k 1% 0,063W
R117	4822 051 30103	10k 5% 0,062W
R122	4822 051 30682	6k8 5% 0,062W
R123	4822 051 30271	270R 5% 0,062W
R124	4822 051 30271	270R 5% 0,062W
R125	4822 051 30271	270R 5% 0,062W
R126	4822 051 30271	270R 5% 0,062W
R127	4822 051 30102	1k 5% 0,062W
R128	4822 117 12891	220k 1% 0,062W
R129	4822 117 12891	220k 1% 0,062W
R130	4822 051 30101	100R 5% 0,062W
R131	4822 051 30101	100R 5% 0,062W
R132	4822 051 30101	100R 5% 0,062W
R133	4822 051 30101	100R 5% 0,062W
R135	4822 051 30562	5k6 5% 0,063W
R136	Refer to capacitor 2334	
R137	4822 051 30103	10k 5% 0,062W
R140	4822 117 12925	47k 1% 0,063W
R142	4822 051 30332	3k3 5% 0,062W
R143	4822 117 12925	47k 1% 0,063W
R145	4822 051 30332	3k3 5% 0,062W
R146	4822 117 12925	47k 1% 0,063W
R147	4822 117 12925	47k 1% 0,063W
R148	4822 051 30332	3k3 5% 0,062W
R149	4822 051 30332	3k3 5% 0,062W
R150	4822 051 30102	1k 5% 0,062W
R151	4822 051 30471	470R 5% 0,062W
R152	4822 117 12925	47k 1% 0,063W
R153	4822 051 30222	2k2 5% 0,062W
R154	4822 117 12925	47k 1% 0,063W
R155	4822 051 30103	10k 5% 0,062W
R156	4822 051 30222	2k2 5% 0,062W
R157	4822 051 30102	1k 5% 0,062W
R158	4822 051 30471	470R 5% 0,062W
R159	4822 117 12925	47k 1% 0,063W
R160	4822 051 30102	1k 5% 0,062W
R161	4822 051 30222	2k2 5% 0,062W
R162	4822 051 30102	1k 5% 0,062W
R163	4822 051 30332	3k3 5% 0,062W
R164	4822 051 30332	3k3 5% 0,062W
R165	4822 051 30332	3k3 5% 0,062W
R166	4822 051 30332	3k3 5% 0,062W
R170	4822 117 12925	47k 1% 0,063W
R180	4822 051 30103	10k 5% 0,062W
R182	4822 051 30103	10k 5% 0,062W
R183	4822 051 30103	10k 5% 0,062W
R200	4822 117 13632	100k 1% 0,062W
R201	4822 117 13632	100k 1% 0,062W
R202	4822 051 30103	10k 5% 0,062W
R203	4822 051 30103	10k 5% 0,062W
R204	4822 051 30103	10k 5% 0,062W
R205	4822 051 30102	1k 5% 0,062W
R206	4822 051 30562	5k6 5% 0,063W
R207	4822 051 30472	4k7 5% 0,062W
R208	4822 051 30472	4k7 5% 0,062W
R209	4822 051 30102	1k 5% 0,062W
R210	4822 051 30102	1k 5% 0,062W
R211	4822 051 30339	33R 5% 0,062W
R212	4822 051 30339	33R 5% 0,062W
R213	4822 051 30479	47R 5% 0,062W
R214	4822 051 30479	47R 5% 0,062W
R224	4822 051 30102	1k 5% 0,062W
R225	4822 051 30102	1k 5% 0,062W
R230	4822 051 30273	27k 5% 0,062W
R231	4822 051 30273	27k 5% 0,062W
R232	4822 051 30123	12k 5% 0,062W
R233	4822 051 30682	6k8 5% 0,062W
R234	4822 051 30221	220R 5% 0,062W
R235	4822 051 30221	220R 5% 0,062W
R236	4822 051 30682	6k8 5% 0,062W
R237	4822 051 30123	12k 5% 0,062W
R238	4822 052 10109 ⚠	10R 5% 0,33W
R239	4822 051 30103	10k 5% 0,062W
R240	4822 117 12925	47k 1% 0,063W
R243	4822 051 30222	2k2 5% 0,062W
R244	4822 051 30562	5k6 5% 0,063W
R245	4822 051 30562	5k6 5% 0,063W
R250	4822 117 12925	47k 1% 0,063W
R252	4822 051 30562	5k6 5% 0,063W
R254	4822 117 12925	47k 1% 0,063W
R256	4822 051 30472	4k7 5% 0,062W
R257	4822 051 30472	4k7 5% 0,062W
R259	4822 117 12902	8k2 1% 0,063W
R260	4822 051 30103	10k 5% 0,062W
R261	4822 051 30103	10k 5% 0,062W
R262	4822 051 30102	1k 5% 0,062W
R263	4822 051 30102	1k 5% 0,062W
R265	4822 051 30471	470R 5% 0,062W
R268	4822 051 30102	1k 5% 0,062W
R269	4822 051 30221	220R 5% 0,062W
R270	4822 051 30471	470R 5% 0,062W
R271	4822 051 30471	470R 5% 0,062W
R272	4822 051 30682	6k8 5% 0,062W
R273	4822 051 30103	10k 5% 0,062W
R274	4822 051 30682	6k8 5% 0,062W
R275	4822 051 30689	68R 5% 0,063W
R276	4822 051 30102	1k 5% 0,062W
R277	4822 117 12925	47k 1% 0,063W
R290	4822 052 10108 ⚠	1R 5% 0,33W
R302	4822 051 30223	22k 5% 0,062W
R303	4822 117 11817	1k2 1% 0,062W
R304	4822 051 30222	2k2 5% 0,062W
R305	4822 051 30689	68R 5% 0,063W
R306	4822 051 30102	1k 5% 0,062W
R307	4822 051 30102	1k 5% 0,062W
R308	4822 051 30222	2k2 5% 0,062W
R310	4822 051 30102	1k 5% 0,062W
R311	4822 051 30102	1k 5% 0,062W
R312	4822 051 30102	1k 5% 0,062W
R313	4822 051 30102	1k 5% 0,062W
R314	4822 051 30102	1k 5% 0,062W
R315	4822 051 30102	1k 5% 0,062W
R316	4822 051 30102	1k 5% 0,062W
R317	4822 051 30102	1k 5% 0,062W
R318	4822 051 30682	6k8 5% 0,062W
R319	4822 051 30103	10k 5% 0,062W
R320	4822 051 30682	6k8 5% 0,062W
R321	4822 051 30103	10k 5% 0,062W
R322	4822 051 30689	68R 5% 0,063W
R324	4822 051 30102	1k 5% 0,062W
R325	4822 051 30102	1k 5% 0,062W
R326	4822 051 30102	1k 5% 0,062W
R327	4822 051 30222	2k2 5% 0,062W
R328	4822 051 30102	1k 5% 0,062W
R329	4822 051 30102	1k 5% 0,062W
R333	4822 051 30102	1k 5% 0,062W
R334	4822 051 30102	1k 5% 0,062W
R335	4822 051 30102	1k 5% 0,062W
R336	4822 051 30689	68R 5% 0,063W
R337	4822 051 30102	1k 5% 0,062W
R338	4822 051 30102	1k 5% 0,062W
R339	4822 051 30102	1k 5% 0,062W
R340	4822 051 30223	22k 5% 0,062W
R342	4822 051 30102	1k 5% 0,062W
R343	4822 051 30682	6k8 5% 0,062W
R347	4822 051 30103	10k 5% 0,062W
R349	4822 117 12902	8k2 1% 0,063W
R355	4822 051 30681	680R 5% 0,062W
R356	4822 051 30101	100R 5% 0,062W
R357	4822 117 13632	100k 1% 0,062W
R359	4822 117 12925	47k 1% 0,063W
R368	4822 051 30101	100R 5% 0,062W
R369	4822 051 30101	100R 5% 0,062W
R370	4822 051 30101	100R 5% 0,062W
R411	4822 051 30271	270R 5% 0,062W
R424	4822 051 30689	68R 5% 0,063W
R425	4822 051 30689	68R 5% 0,063W
R426	4822 051 30689	68R 5% 0,063W
R427	4822 051 30689	68R 5% 0,063W
R431	4822 051 30101	100R 5% 0,062W
R432	4822 117 11817	1k2 1% 0,062W
R434	4822 051 30101	100R 5% 0,062W
R435	4822 117 11817	1k2 1% 0,062W
R438	4822 117 11817	1k2 1% 0,062W
R441	4822 051 30471	470R 5% 0,062W
R442	4822 051 30471	470R 5% 0,062W
R444	4822 051 30339	33R 5% 0,062W
R445	4822 051 30151	150R 5% 0,062W
R447	4822 051 30101	100R 5% 0,062W
R448	4822 117 11817	1k2 1% 0,062W
R449	4822 051 30101	100R 5% 0,062W
R450	4822 117 11817	1k2 1% 0,062W
R451	4822 051 30153	15k 5% 0,062W
R452	4822 051 30153	15k 5% 0,062W
R454	4822 117 12925	47k 1% 0,063W
R455	4822 117 12925	47k 1% 0,063W
R456	4822 051 30153	15k 5% 0,062W
R457	4822 117 12925	47k 1% 0,063W
R458	4822 051 30153	15k 5% 0,062W
R459	4822 117 12925	47k 1% 0,063W
R472	4822 052 10478 ⚠	4R7 5% 0,33W
R473	4822 051 30103	10k 5% 0,062W
R474	4822 051 30103	10k 5% 0,062W
R480	4822 052 10478 ⚠	4R7 5% 0,33W
R481	4822 051 30472	4k7 5% 0,062W
R482	4822 051 30562	5k6 5% 0,063W
R483	4822 051 30472	4k7 5% 0,062W
R484	4822 051 30562	5k6 5% 0,063W
R4103	4822 051 30008	0R Jumper 0603
R4104	4822 051 30008	0R Jumper 0603
R4107	4822 051 30008	0R Jumper 0603
R4116	4822 051 30008	0R Jumper 0603
R4193	4822 051 30008	0R Jumper 0603
R4194	4822 051 30008	0R Jumper 0603
R4196	4822 051 30008	0R Jumper 0603
R4197	4822 051 30008	0R Jumper 0603
R4198	4822 051 30008	0R Jumper 0603
R4200	4822 051 30008	0R Jumper 0603
R4201	4822 051 30008	0R Jumper 0603
R4205	4822 051 30008	0R Jumper 0603
R4206	4822 051 30008	0R Jumper 0603
R4209	4822 051 30008	0R Jumper 0603
R4330	4822 051 30008	0R Jumper 0603
R4341	4822 051 30008	0R Jumper 0603
R4342	4822 051 30008	0R Jumper 0603
R4382	4822 051 30008	0R Jumper 0603
R4400	4822 051 30008	0R Jumper 0603
R4404	4822 051 30008	0R Jumper 0603
R4409	4822 051 30008	0R Jumper 0603
R4410	4822 051 30008	0R Jumper 0603
R4411	4822 051 30008	0R Jumper 0603
R4412	4822 051 30008	0R Jumper 0603
R4414	4822 051 30008	0R Jumper 0603
R4415	4822 051 30008	0R Jumper 0603
R4416	4822 051 30008	0R Jumper 0603
R4421	4822 051 30008	0R Jumper 0603

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ELECTRICAL PARTS LIST - AV BOARD

RESISTORS

4428	4822 051 30008	0R Jumper 0603
4500	4822 051 30008	0R Jumper 0603
4501	4822 051 30008	0R Jumper 0603
4502	4822 051 30008	0R Jumper 0603
4503	4822 051 30008	0R Jumper 0603
4504	4822 051 30008	0R Jumper 0603
4505	4822 051 30008	0R Jumper 0603
4506	4822 051 30008	0R Jumper 0603
4507	4822 051 30008	0R Jumper 0603
4508	4822 051 30008	0R Jumper 0603
4510	4822 051 30008	0R Jumper 0603
4511	4822 051 30008	0R Jumper 0603
4512	4822 051 30008	0R Jumper 0603
4513	4822 051 30008	0R Jumper 0603
4514	4822 051 30008	0R Jumper 0603
4515	4822 051 30008	0R Jumper 0603
4516	4822 051 30008	0R Jumper 0603
4517	4822 051 30008	0R Jumper 0603
4518	4822 051 30008	0R Jumper 0603
4519	4822 051 30008	0R Jumper 0603
4520	4822 051 30008	0R Jumper 0603
4521	4822 051 30008	0R Jumper 0603
4522	4822 051 30008	0R Jumper 0603
4523	4822 051 30008	0R Jumper 0603
4524	4822 051 30008	0R Jumper 0603
4525	4822 051 30008	0R Jumper 0603
4527	4822 051 30008	0R Jumper 0603
4528	4822 051 30008	0R Jumper 0603
4529	4822 051 30008	0R Jumper 0603
4530	4822 051 30008	0R Jumper 0603
4531	4822 051 30008	0R Jumper 0603
4532	4822 051 30008	0R Jumper 0603
4533	4822 051 30008	0R Jumper 0603
4534	4822 051 30008	0R Jumper 0603
4535	4822 051 30008	0R Jumper 0603
4537	4822 051 30008	0R Jumper 0603
4538	4822 051 30008	0R Jumper 0603
4539	4822 051 30008	0R Jumper 0603
4540	4822 051 30008	0R Jumper 0603
4541	4822 051 30008	0R Jumper 0603
4542	4822 051 30008	0R Jumper 0603
4543	4822 051 30008	0R Jumper 0603
4544	4822 051 30008	0R Jumper 0603
4545	4822 051 30008	0R Jumper 0603
4546	4822 051 30008	0R Jumper 0603
4548	4822 051 30008	0R Jumper 0603
4549	4822 051 30008	0R Jumper 0603
4550	4822 051 30008	0R Jumper 0603
4551	4822 051 30008	0R Jumper 0603
4552	4822 051 30008	0R Jumper 0603
4553	4822 051 30008	0R Jumper 0603
4554	4822 051 30008	0R Jumper 0603
4555	4822 051 30008	0R Jumper 0603
4556	4822 051 30008	0R Jumper 0603
4557	4822 051 30008	0R Jumper 0603
4558	4822 051 30008	0R Jumper 0603
4559	4822 051 30008	0R Jumper 0603
4560	4822 051 30008	0R Jumper 0603
4561	4822 051 30008	0R Jumper 0603
4562	4822 051 30008	0R Jumper 0603
4563	4822 051 30008	0R Jumper 0603
4564	4822 051 30008	0R Jumper 0603
4565	4822 051 30008	0R Jumper 0603
4566	4822 051 30008	0R Jumper 0603
4570	4822 051 30008	0R Jumper 0603
4571	4822 051 30008	0R Jumper 0603
4572	4822 051 30008	0R Jumper 0603
4573	4822 051 30008	0R Jumper 0603
4574	4822 051 30008	0R Jumper 0603
4575	4822 051 30008	0R Jumper 0603
4579	4822 051 30008	0R Jumper 0603
4585	4822 051 30008	0R Jumper 0603
4593	4822 051 30008	0R Jumper 0603
4598	4822 051 30008	0R Jumper 0603
4653	4822 051 30008	0R Jumper 0603

COILS & FILTERS

5201	2422 536 00548	Coil 100uH 15%
5232	4822 157 10586	Coil 2,2uH 10%
5401	4822 157 10586	Coil 2,2uH 10%
5402	4822 157 70601	Coil 100uH 10%
5407	4822 157 10586	Coil 2,2uH 10%

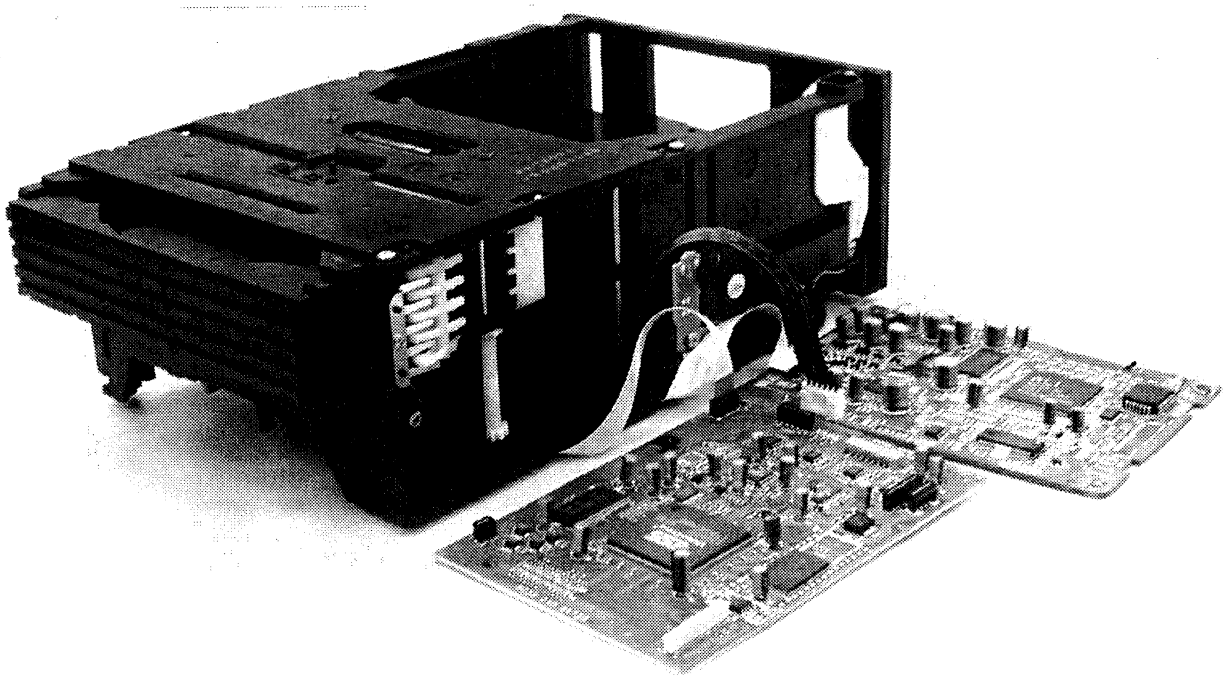
DIODES

6101	9337 12920673	BZX79-C11
6123	9340 548 61115	BZX384-C12
6200	4822 130 11397	BAS316
6201	4822 130 11397	BAS316
6202	4822 130 10871	SBYV27-200
6204	4822 130 31878	1N4003G
6205	9322 128 70685	SS14
6223	4822 130 31878	1N4003G
6224	4822 130 34278	BZX79-B6V8
6225	4822 130 31878	1N4003G
6226	4822 130 34142	BZX79-B33
6227	4822 130 11397	BAS316
6228	4822 130 11397	BAS316

TRANSISTORS & INTEGRATED CIRCUITS

7100	5322 130 60159	BC847B
7101	4822 130 60373	BC857B
7130	9322 150 74668	TDA7468D
7131	4822 130 40959	BC547B
7132	4822 130 60373	BC857B
7133	4822 130 42804	BC817-25
7150	5322 130 60159	BC847B
7200	4822 130 42804	BC817-25
7204	4822 130 40995	BD438 only for Prod start up
	9322 196 61687	BD242 running chang over
7205	4822 130 41246	BC327-25
7206	4822 130 40995	BD438
7207	3198 010 42310	BC847BW
7208	4822 130 40995	BD438
7209	3198 010 42310	BC847BW
7210	9322 188 75682	LM2576T-3.3
7211	3198 010 42310	BC847BW
7230	4822 209 31378	NJM4556MB
7231	4822 130 60373	BC857B
7232	5322 130 60159	BC847B
7233	5322 130 60159	BC847B
7250	4822 130 42804	BC817-25
7252	4822 130 60373	BC857B
7253	5322 130 60159	BC847B
7301	5322 130 60159	BC847B
7302	4822 130 60373	BC857B
7304	9322 150 74668	TDA7468D
7330	9322 150 74668	TDA7468D
7352	9337 148 20653	74HC4051D
7402	4822 209 17345	M62320FP
7405	5322 130 60159	BC847B
7406	5322 130 60159	BC847B
7421	5322 130 60159	BC847B
7422	5322 209 11102	HEF4052BT
7423	5322 130 60159	BC847B
7451	4822 130 42804	BC817-25
7452	4822 130 42804	BC817-25

Note: Only the parts mentioned in this list are normal service spare parts.



5DTC MODULE

(DVD Version)

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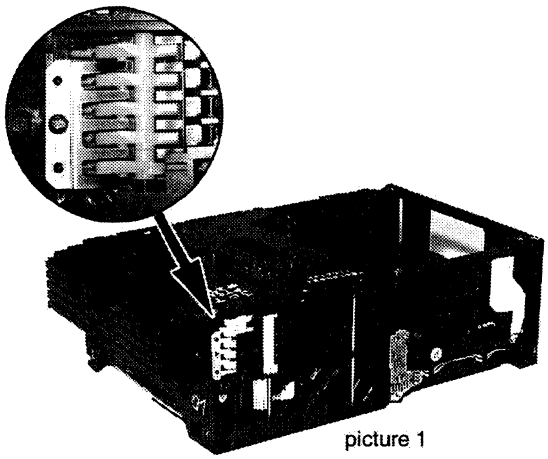
For Mono-FE (Front End) and Mono-BE (Back End) PCB assemblies information see chapters 11 and 12 in this service documentation.

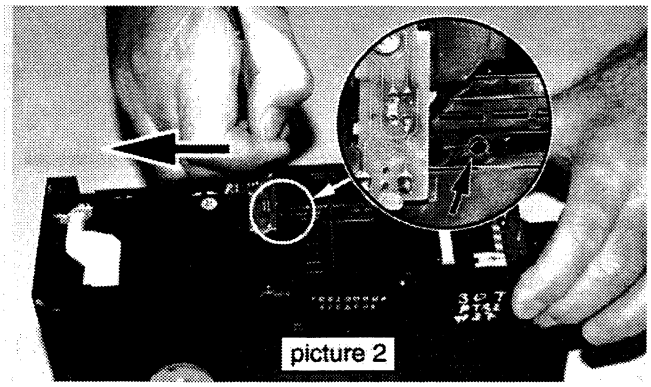
Emergency opening of the trays

The trays of the 5DTC are mechanically ocked.



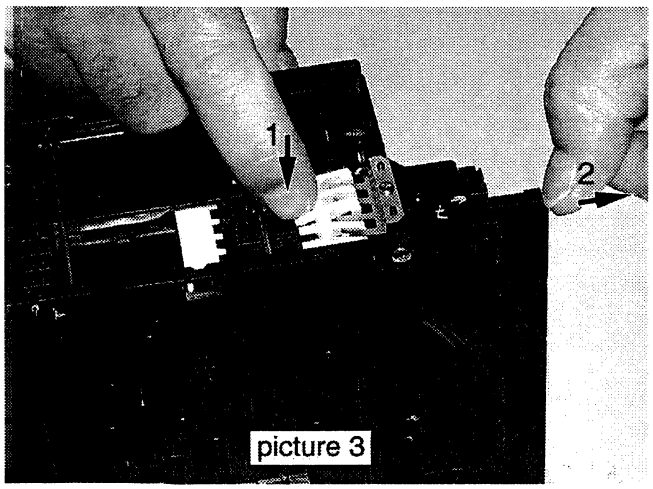
picture 1

To open tray 1, 2 and 3 move lever (pos 29) backwards (e.g. with a screwdriver - see picture 2) to its endposition.



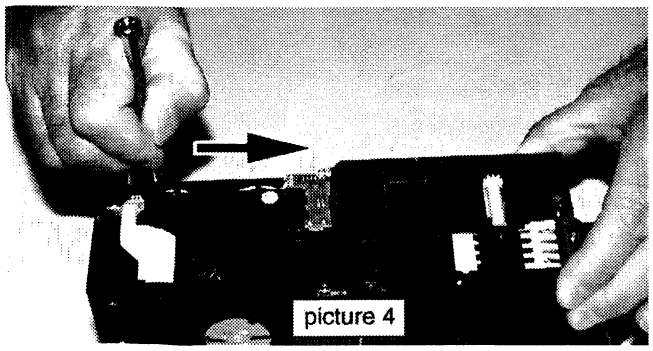
picture 2

Release the locking mechanism and pull out the tray (see picture 3).



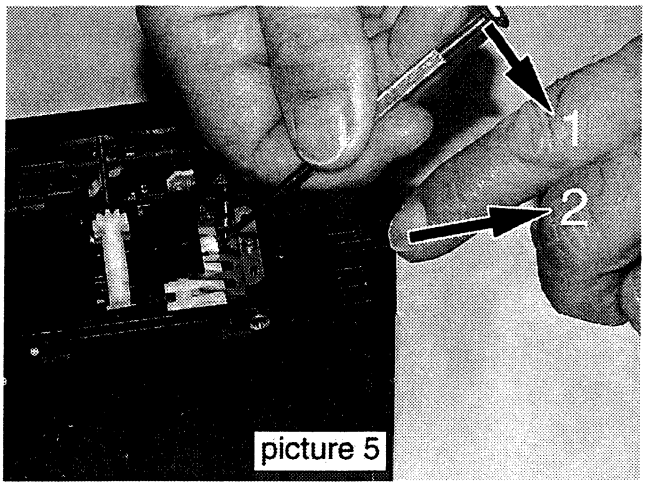
picture 3

To open tray 4 and 5 move lever (pos 29) forward to its endposition (see picture 4).



picture 4

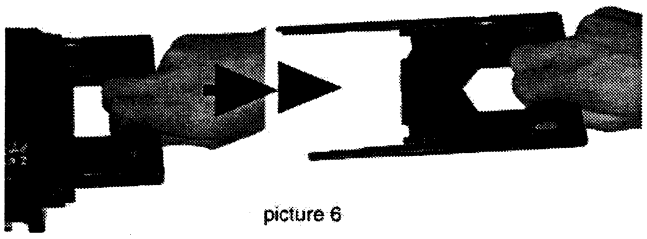
Release snap as shown in picture 5 and pull tray out.



picture 5

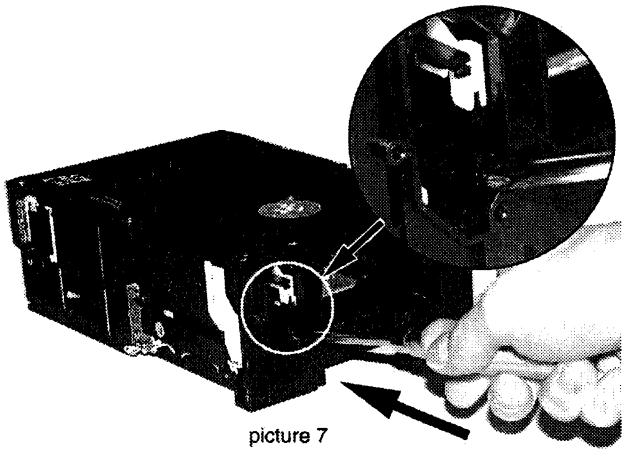
To remove a CD from Play Position perform following steps:

1. Open tray 1 as described before.
2. Tear the tray out with speed (see picture 6). The tray can be inserted aftewards without any alignment.



picture 6

3. Move lever (pos 29) forward to its endposition (see picture 4).
4. Push lever (pos 31) forward (see picture 7).

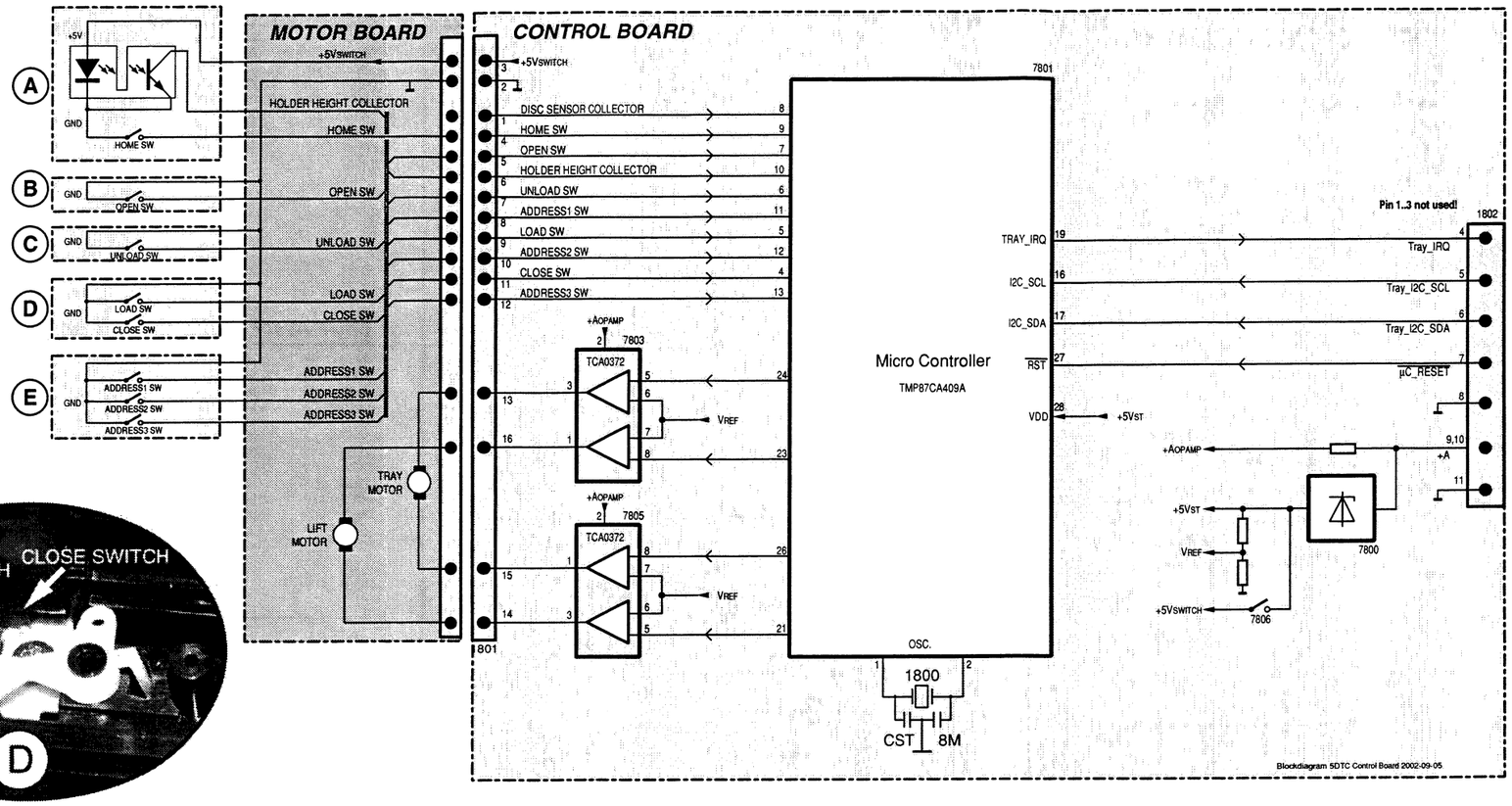


picture 7

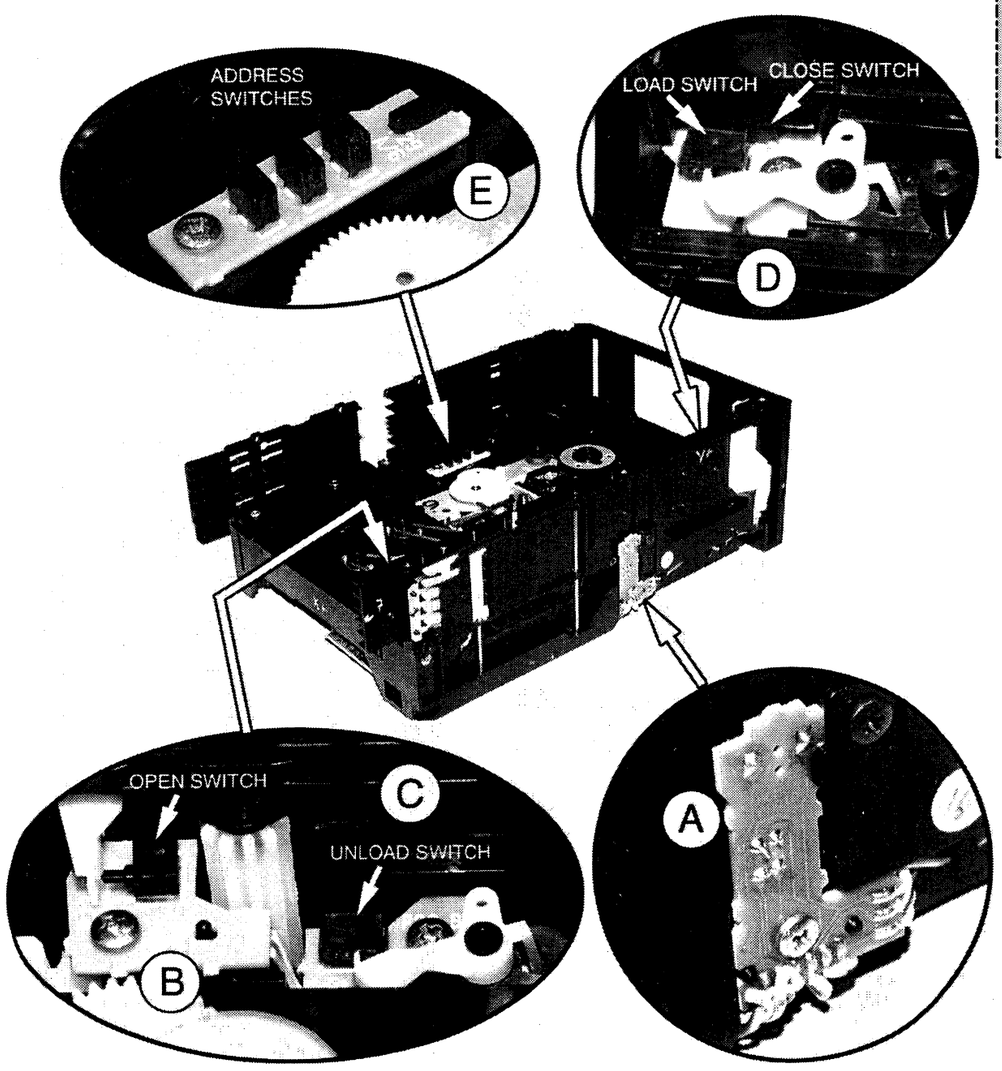
5. Remove CD.

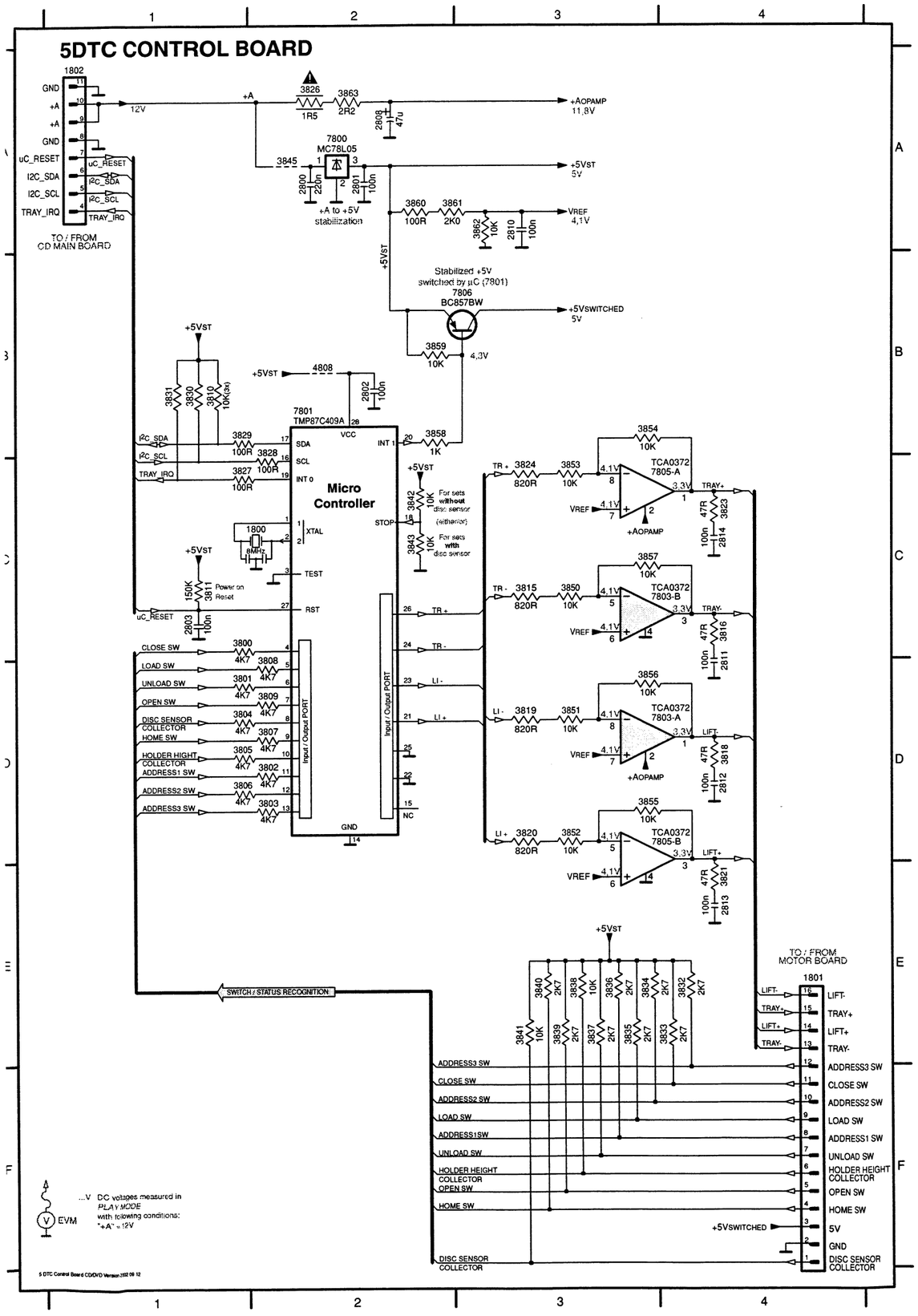
10-3

Blockdiagram



Location of switches



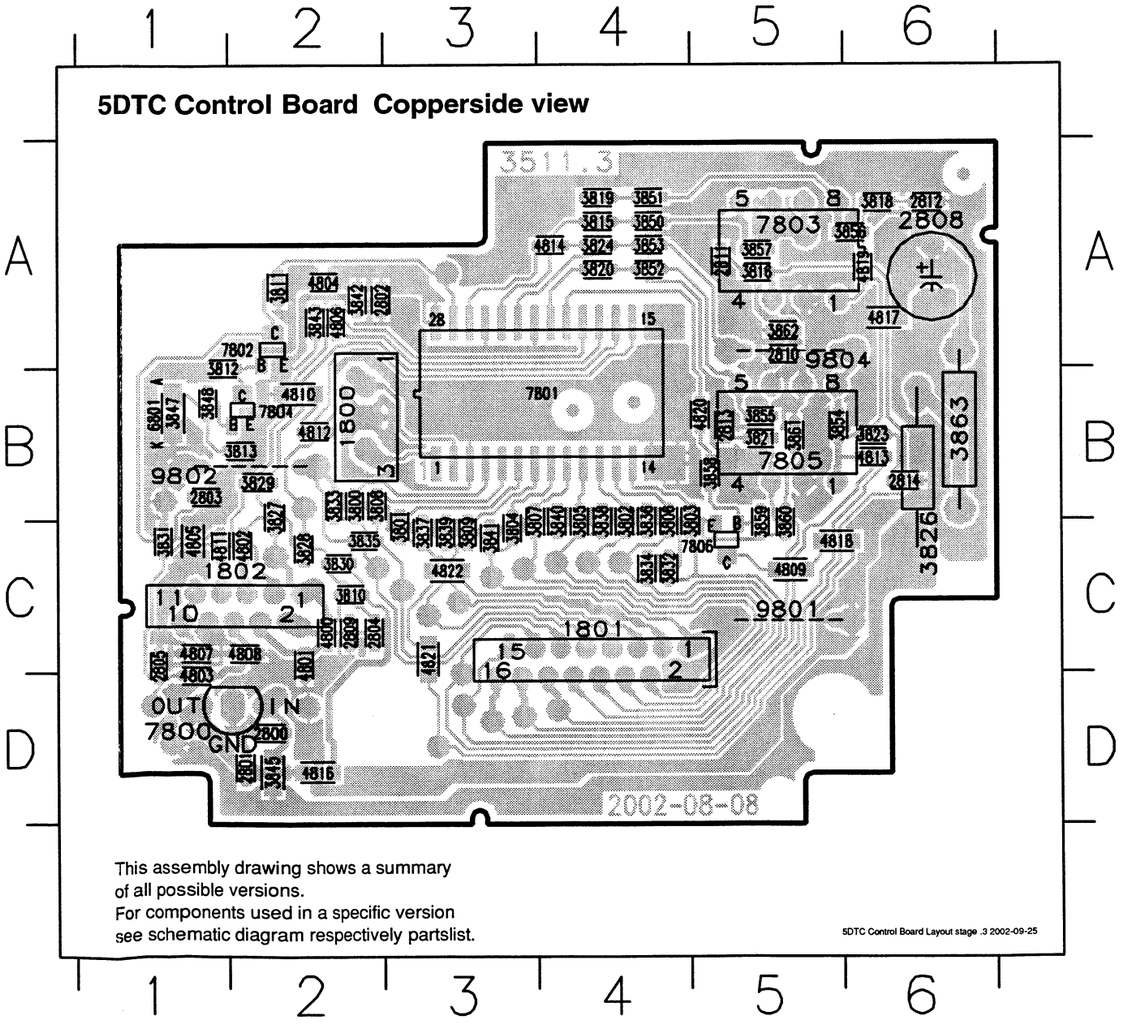


Mapping for Circuit Diagram

1800	C2	2810	A3	3804	D1	3811	C1	3824	C3	3833	E4	3841	E3	3854	B3	3862	A3	7805-B	D3
1801	E4	2811	D4	3805	D1	3815	C3	3826	A2	3834	E3	3842	C2	3855	D3	3863	A2	7806	B3
1802	A1	2812	D4	3806	D1	3816	C4	3827	C1	3835	E3	3843	C2	3856	D3	4808	B2		
2800	A2	2813	E4	3807	D2	3818	D4	3828	C2	3836	E3	3845	A2	3857	C3	7800	A2		
2801	A2	2814	C4	3808	D1	3819	D3	3829	B1	3837	E3	3850	C3	3858	B2	7801	B2		
2802	B2	3800	C1	3808	D2	3820	D3	3830	B1	3838	E3	3851	D3	3859	B3	7803-A	D3		
2803	C1	3802	D2	3809	D2	3821	E4	3831	B1	3839	E3	3852	D3	3860	A2	7803-B	C3		
2808	A2	3803	D2	3810	B1	3823	C4	3832	E4	3840	E3	3853	C3	3861	A2	7805-A	C3		

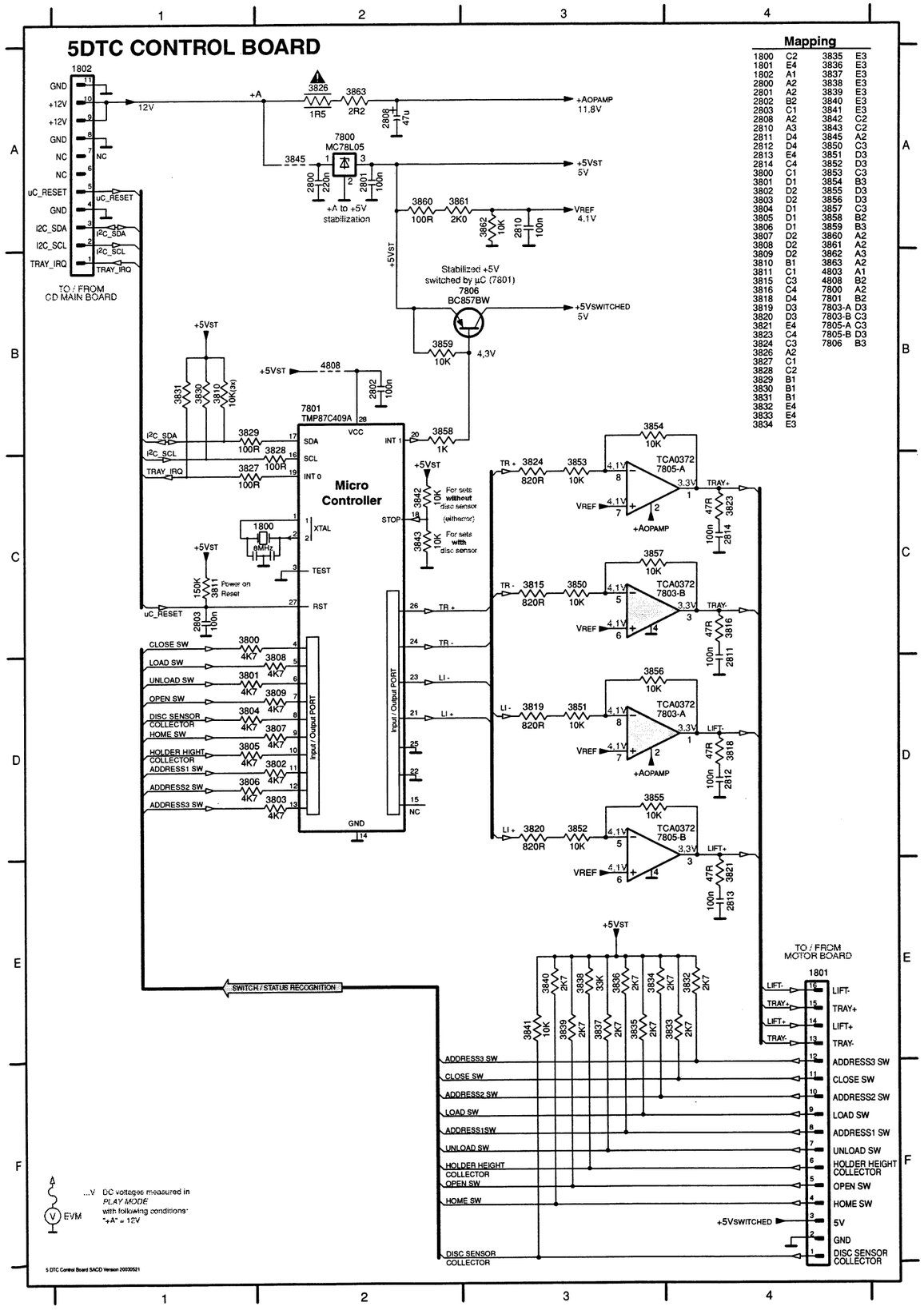
Mapping for Component Layout

1800	B2	2810	A5	3806	C4	3819	A4	3832	C4	3843	A2	3857	A5	4804	A2	4816	D2	7803	A5
1801	C4	2811	A5	3807	C3	3820	A4	3833	B2	3845	D2	3858	B5	4805	C1	4817	A6	7804	B2
1802	C2	2812	A6	3808	B2	3821	B5	3834	C4	3847	B1	3859	C5	4806	A2	4818	C5	7806	C5
2800	D2	2813	B5	3809	C3	3823	B6	3835	C2	3848	B1	3860	C5	4807	C1	4819	A6	9801	C5
2801	D2	2814	B6	3810	C2	3824	A4	3836	C4	3850	A4	3861	B5	4808	C2	4820	B5	9802	B2
2802	A2	3300	B2	3811	A2	3826	B6	3837	C3	3851	A4	3862	A5	4809	C5	4821	C3	9804	A5
2803	B1	3301	C3	3812	A1	3827	B2	3838	C4	3852	A4	3863	B6	4810	B2	4822	C3		
2804	C2	3302	C4	3813	B2	3828	C2	3839	C3	3853	A4	4800	C2	4811	C1	6801	B1		
2805	C1	3803	C4	3815	A4	3829	B2	3840	C4	3854	B5	4801	C2	4812	B2	7800	D2		
2808	A6	3304	C3	3816	A5	3830	C2	3841	C3	3855	B5	4802	C2	4813	B6	7801	B4		
2809	C2	3305	C4	3818	A6	3831	C1	3842	A2	3856	A6	4803	D1	4814	A4	7802	A2		



This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram respectively partslist.

5DTC Control Board Layout stage .3 2002-09-25



Mapping

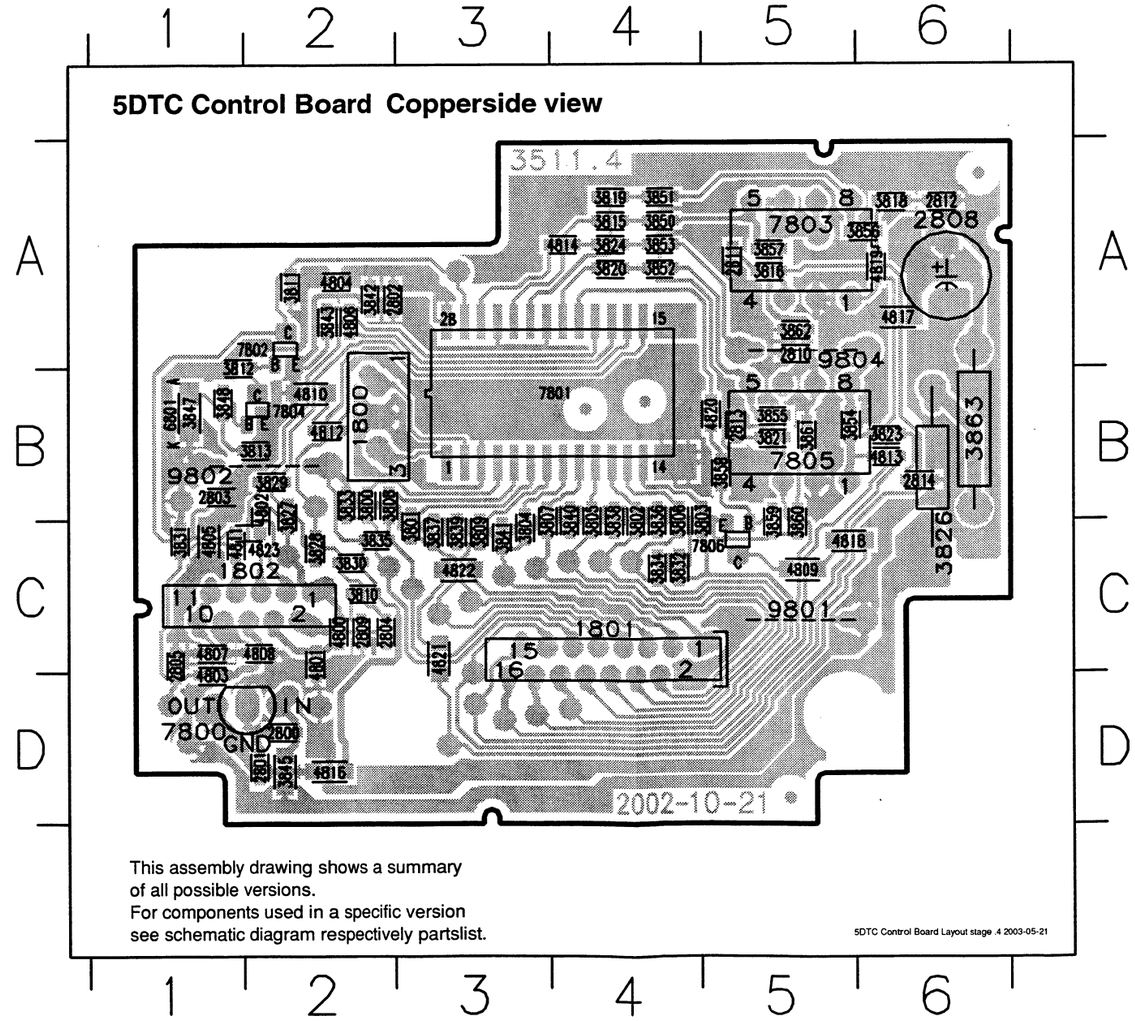
1800	C2	2810	A3	3804	D1	3811	C1	3824	C3	3833	E4	3841	E3	3854	B3	3862	A3	7805-B	D3
1801	E4	2811	D4	3805	D1	3815	C3	3826	A2	3834	E3	3842	C2	3855	D3	3863	A2	7806	B3
1802	A1	2812	D4	3806	D1	3816	C4	3827	C1	3835	E3	3843	C2	3856	D3	4808	B2		
2800	A2	2813	E4	3807	D2	3818	D4	3828	C2	3836	E3	3845	A2	3857	C3	7800	A2		
2801	A2	2814	C4	3808	D1	3819	D3	3829	B1	3837	E3	3850	C3	3858	B2	7801	B2		
2802	B2	3800	C1	3808	D2	3820	D3	3830	B1	3838	E3	3851	D3	3859	B3	7803-A	D3		
2803	C1	3802	D2	3809	D2	3821	E4	3831	B1	3839	E3	3852	D3	3860	A2	7803-B	C3		
2808	A2	3803	D2	3810	B1	3823	C4	3832	E4	3840	E3	3853	C3	3861	A2	7805-A	C3		

Mapping for Circuit Diagram

1800	C2	2810	A3	3804	D1	3811	C1	3824	C3	3833	E4	3841	E3	3854	B3	3862	A3	7805-B	D3
1801	E4	2811	D4	3805	D1	3815	C3	3826	A2	3834	E3	3842	C2	3855	D3	3863	A2	7806	B3
1802	A1	2812	D4	3806	D1	3816	C4	3827	C1	3835	E3	3843	C2	3856	D3	4808	B2		
2800	A2	2813	E4	3807	D2	3818	D4	3828	C2	3836	E3	3845	A2	3857	C3	7800	A2		
2801	A2	2814	C4	3808	D1	3819	D3	3829	B1	3837	E3	3850	C3	3858	B2	7801	B2		
2802	B2	3800	C1	3808	D2	3820	D3	3830	B1	3838	E3	3851	D3	3859	B3	7803-A	D3		
2803	C1	3802	D2	3809	D2	3821	E4	3831	B1	3839	E3	3852	D3	3860	A2	7803-B	C3		
2808	A2	3803	D2	3810	B1	3823	C4	3832	E4	3840	E3	3853	C3	3861	A2	7805-A	C3		

Mapping for Component Layout

1800	B2	2810	A5	3806	C4	3819	A4	3832	C4	3843	A2	3857	A5	4804	A2	4816	D2	7802	A2
1801	C4	2811	A5	3807	C3	3820	A4	3833	B2	3845	D2	3858	B5	4805	C1	4817	A6	7803	A5
1802	C2	2812	A6	3808	B2	3821	B5	3834	C4	3847	B1	3859	C5	4806	A2	4818	C5	7804	B2
2800	D2	2813	B5	3809	C3	3823	B6	3835	C2	3848	B1	3860	C5	4807	C1	4819	A6	7806	C5
2801	D2	2814	B6	3810	C2	3824	A4	3836	C4	3850	A4	3861	B5	4808	C2	4820	B5	9801	C5
2802	A2	3800	B2	3811	A2	3826	B6	3837	C3	3851	A4	3862	A5	4809	C5	4821	C3	9802	B2
2803	B1	3801	C3	3812	A1	3827	B2	3838	C4	3852	A4	3863	B6	4810	B2	4822	C3	9804	A5
2804	C2	3802	C4	3813	B2	3828	C2	3839	C3	3853	A4	4800	C2	4811	C1	4823	B1		
2805	C1	3803	C4	3815	A4	3829	B2	3840	C4	3854	B5	4801	C2	4812	B2	6801	B1		
2808	A6	3804	C3	3816	A5	3830	C2	3841	C3	3855	B5	4802	C2	4813	B6	7800	D2		
2809	C2	3805	C4	3818	A6	3831	C1	3842	A2	3856	A6	4803	D1	4814	A4	7801	B4		

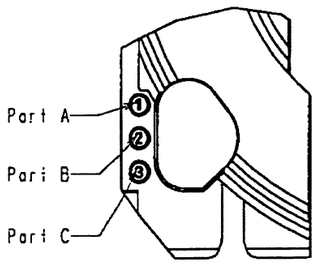


10-5

Exploded view 5DTC mechanic - for orientation only

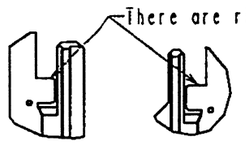
Sketch-1

TRAY(SUB)	(3)	(83)	(84)	(85)	(86)
TRAY No.	TRAY 1	TRAY 2	TRAY 3	TRAY 4	TRAY 5
Part A	(1)	HOLE	(1)	HOLE	(1)
Part B	(2)	(2)	HOLE	HOLE	(2)
Part C	(3)	(3)	(3)	(3)	HOLE

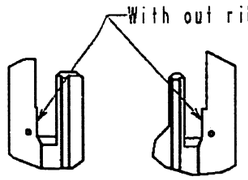


Sketch-2

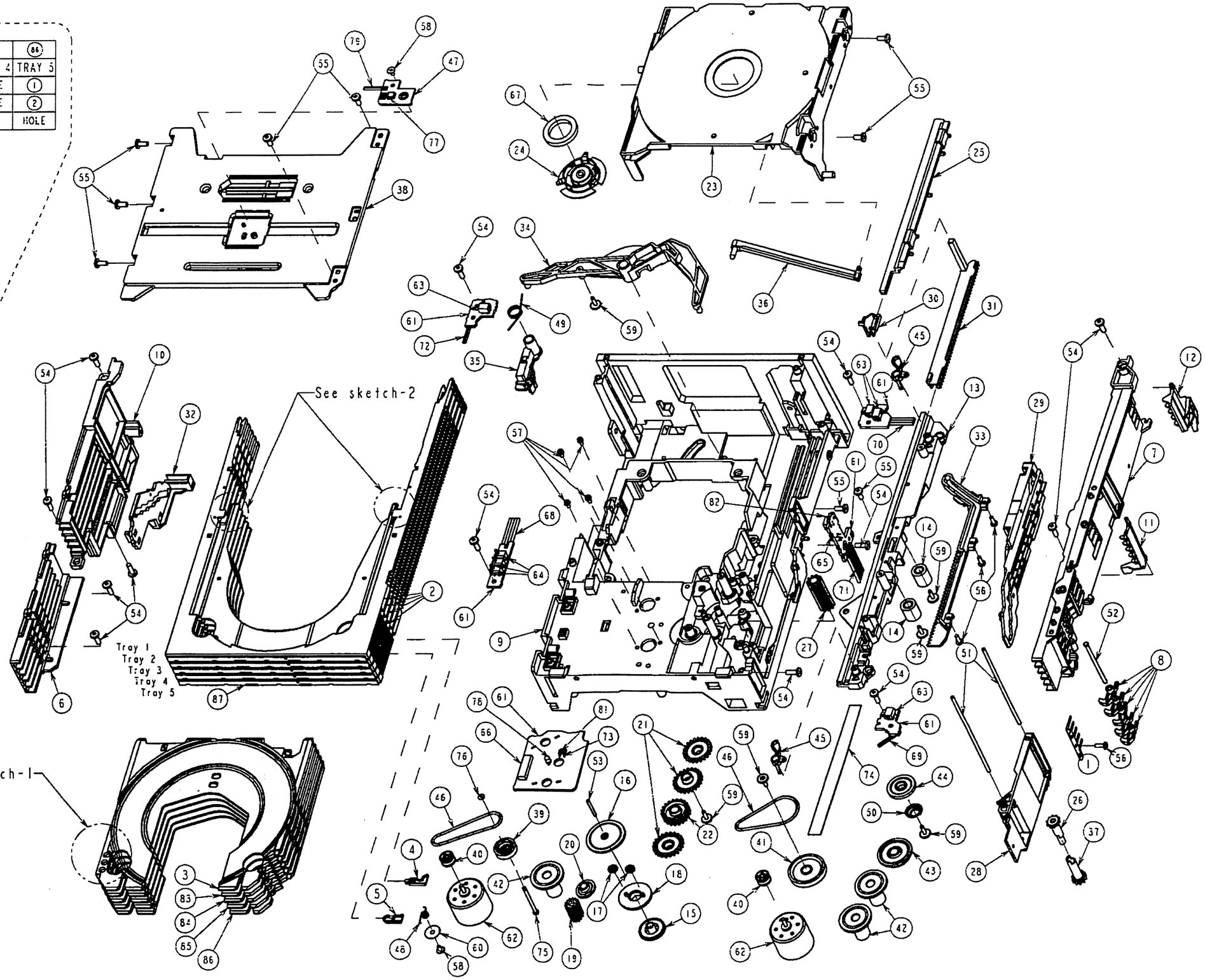
TRAY(MAIN)



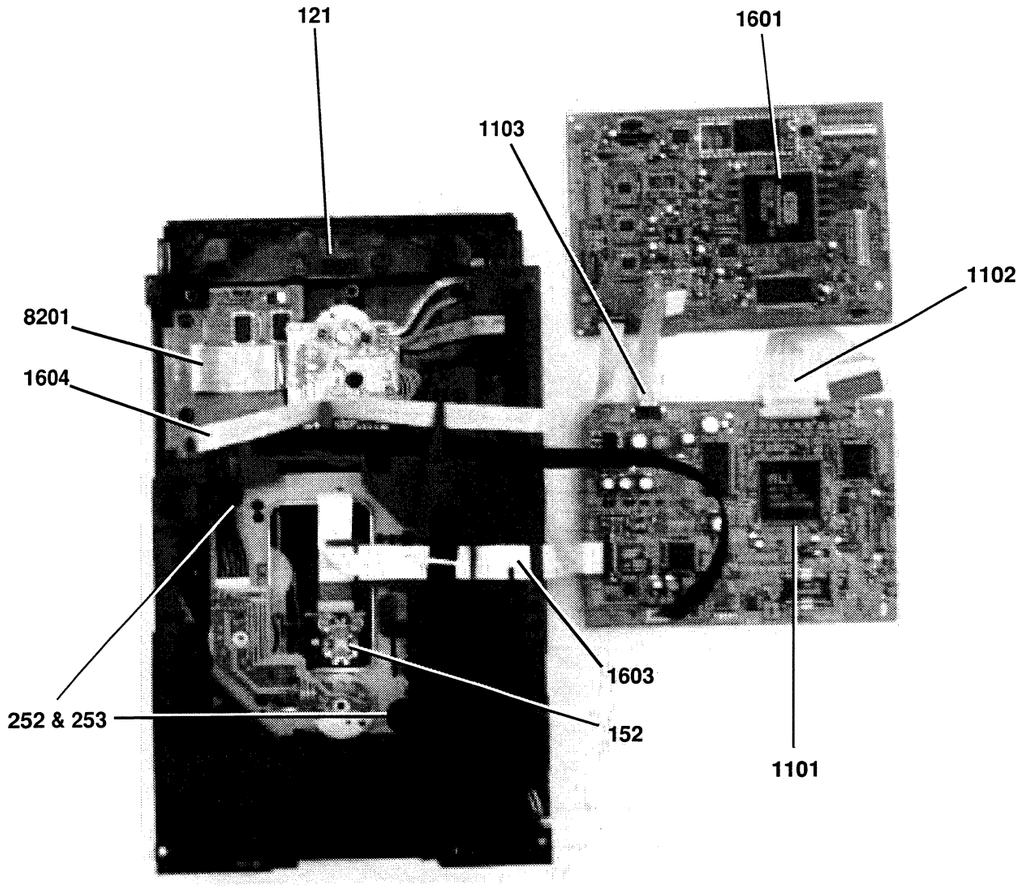
(2) TRAY 1~4



(87) TRAY 5



DVD MODULE COMPONENTS



DVD MODULE PARTS LIST

121	3103 308 54710	5DTC Mechanism w/o Electronics
152	3139 119 00311	DVD Mechanism Sanyo-DV33SS
252	3139 113 27501	Damper-Rubber (50 Degrees)
253	3139 113 27501	Damper-Rubber (50 Degrees)
1101	3139 118 56941	Mono FE (Front End) PCB Assembly CD222
1102	3139 111 02151	FFC Cable 40P 10cm BD
1103	3139 111 02141	FFC Cable 7P 10cm BD
1601	3139 118 56481	Mono BE (Back End) PCB Assembly CD222
1603	3139 111 01671	FFC Cable 24P 21cm AD
1604	3139 110 35620	FFC Cable 8P 25cm BD
8021	3103 308 93110	FFC Cable 16P 6cm AD

Note: Only the parts mentioned in this list are normal service spare parts.

Notes:

For Mono FE and Mono BE pc board assembly electrical parts please refer to Chapter 11 and 12.

10-6

ELECTRICAL PARTS LIST - CONTROL BOARD

MISCELLANEOUS

1800	4822 242 72066	Ceram Filter 8MHz
1801	2422 025 17065	FFC Connector 16Pin Vert.
1802	2422 025 17788	FFC Connector 8Pin Vert.

CAPACITORS

2800	4822 126 13879	220nF +80/-20% 16V
2801	2238 586 59812	100nF 10% 50V
2802	2238 586 59812	100nF 10% 50V
2803	2238 586 59812	100nF 10% 50V
2808	4822 124 40433	47uF 20% 25V
2810	2238 586 59812	100nF 10% 50V
2811	2238 586 59812	100nF 10% 50V
2812	2238 586 59812	100nF 10% 50V
2813	2238 586 59812	100nF 10% 50V
2814	2238 586 59812	100nF 10% 50V

RESISTORS

3800	4822 051 30472	4k7 5% 0,062W
3801	4822 051 30472	4k7 5% 0,062W
3802	4822 051 30472	4k7 5% 0,062W
3803	4822 051 30472	4k7 5% 0,062W
3804	4822 051 30472	4k7 5% 0,062W
3805	4822 051 30472	4k7 5% 0,062W
3806	4822 051 30472	4k7 5% 0,062W
3807	4822 051 30472	4k7 5% 0,062W
3808	4822 051 30472	4k7 5% 0,062W
3809	4822 051 30472	4k7 5% 0,062W
3810	4822 051 30103	10k 5% 0,062W
3811	4822 051 30154	150k 5% 0,062W
3815	5322 117 13057	820R 1% 0,063W
3816	4822 051 30479	47R 5% 0,062W
3818	4822 051 30479	47R 5% 0,062W
3819	5322 117 13057	820R 1% 0,063W
3820	5322 117 13057	820R 1% 0,063W
3821	4822 051 30479	47R 5% 0,062W
3823	4822 051 30479	47R 5% 0,062W
3824	5322 117 13057	820R 1% 0,063W
3826	4822 117 12148	1R5 5% 0,33W
3827	4822 051 30101	100R 5% 0,062W
3828	4822 051 30101	100R 5% 0,062W
3829	4822 051 30101	100R 5% 0,062W
3830	4822 051 30103	10k 5% 0,062W
3831	4822 051 30103	10k 5% 0,062W
3832	4822 051 30272	2k7 5% 0,062W
3833	4822 051 30272	2k7 5% 0,062W
3834	4822 051 30272	2k7 5% 0,062W
3835	4822 051 30272	2k7 5% 0,062W
3836	4822 051 30272	2k7 5% 0,062W
3837	4822 051 30272	2k7 5% 0,062W
3838	4822 051 30333	33k 5% 0,062W
3839	4822 051 30272	2k7 5% 0,062W
3840	4822 051 30272	2k7 5% 0,062W
3841	4822 051 30103	10k 5% 0,062W
3842	4822 051 30103	10k 5% 0,062W
3845	4822 051 20008	0R Jumper 0805
3850	4822 117 12706	10k 1% 0,063W
3851	4822 117 12706	10k 1% 0,063W
3852	4822 117 12706	10k 1% 0,063W
3853	4822 117 12706	10k 1% 0,063W
3854	4822 117 12706	10k 1% 0,063W
3855	4822 117 12706	10k 1% 0,063W
3856	4822 117 12706	10k 1% 0,063W
3857	4822 117 12706	10k 1% 0,063W
3858	4822 051 30102	1k 5% 0,062W
3859	4822 051 30103	10k 5% 0,062W
3860	5322 117 13017	100R 1% 0,063W
3861	2322 704 62002	2k 1% 0,063W
3862	4822 117 12706	10k 1% 0,063W
3863	4822 053 10228	2R2 5% 1W
4800	4822 051 30008	0R Jumper 0603
4802	4822 051 30008	0R Jumper 0603
4803	4822 051 30008	0R Jumper 0603
4804	4822 051 30008	0R Jumper 0603
4805	4822 051 20008	0R Jumper 0805
4806	4822 051 30008	0R Jumper 0603
4807	4822 051 30008	0R Jumper 0603
4808	4822 051 30008	0R Jumper 0603
4809	4822 051 20008	0R Jumper 0805
4810	4822 051 20008	0R Jumper 0805
4811	4822 051 30008	0R Jumper 0603
4812	4822 051 30008	0R Jumper 0603
4813	4822 051 30008	0R Jumper 0603
4814	4822 051 30008	0R Jumper 0603
4816	4822 051 20008	0R Jumper 0805
4817	4822 051 20008	0R Jumper 0805
4818	4822 051 20008	0R Jumper 0805
4819	4822 051 30008	0R Jumper 0603
4820	4822 051 30008	0R Jumper 0603
4821	4822 051 20008	0R Jumper 0805
4822	4822 051 20008	0R Jumper 0805

TRANSISTORS & INTEGRATED CIRCUITS

7800	4822 209 72042	MC78L05ACP, Stabilizer
7801	9322 150 41668	TMP87P809M Microcontroller
7803	4822 209 62059	TCA0372DP1, 2-Fold Op-Amp.
7805	4822 209 62059	TCA0372DP1, 2-Fold Op-Amp.
7806	3198 010 42320	BC857BW

Note: Only the parts mentioned in this list are normal service spare parts.

MONO-FE BOARD

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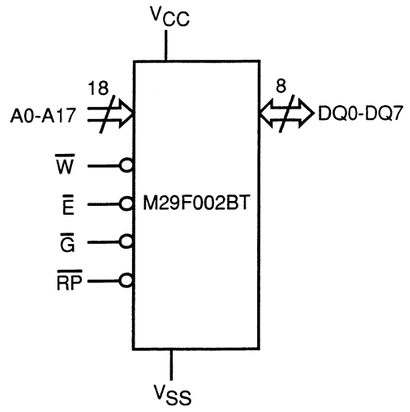
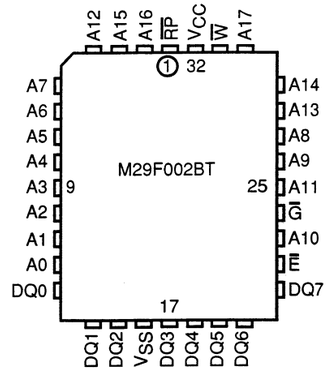
M29F002BT





Function Description

A0-A17	Address Inputs
DQ0-DQ7	Data Inputs/Outputs
$\overline{E}$	Chip Enable
$\overline{G}$	Output Enable
$\overline{W}$	Write Enable
$\overline{RP}$	M29F002BT, M29F002BB: Reset/Block Temporary Unprotect M29F002BNT, M29F002BNB: Not Connected Internally
V_{CC}	Supply Voltage
V_{SS}	Ground

M5705 (Ali) Features

Data Separator

- Built-in data slicer and data PLL for data recovery from RF signal.
- Supports digital/analog slice level adjustment.
- Built-in auto calibration function.
- Built-in auto wire range control function.

DVD-DSP

- Built-in synchronous pattern/ID detection /protection/separation.
- Built-in EFM+ (8 to 16) demodulation circuit.
- Built-in high performance RSPC ECC circuit.
- Supports up to 6X DVD-ROM system with ECC correcting “on the fly”.
- Built-in descrambler/EDC circuit.

CD-DSP

- Synchronous pattern detection, protection and interpolation.
- Built-in EFM demodulation circuit, subcode demodulation circuit.
- Dual C1 correction and quadrule C2 correction.
- Subcode Q data can output with audio data synchronously.

Digital Servo

- Built-in A/D and D/A converters for servo control signals processing.
- Built-in digital controller for focus, tracking servo control of CD/DVD systems.
- Built-in CLV/CAV auxiliary function for spindle servo control.
- Built-in “Seek Sensor” auxiliary circuit for seek control.
- Automatic adjustment of focus servo and tracking servo, for loop gain, offset and balance.
- Built-in RF gain automatic adjustment function.
- Built-in AFC circuit and APC circuit for CLV and AFC circuit for CAV spindle servo of CD/DVD systems.
- Built-in defect and shock protection function.

DRAM Interface

- Supports up to 16 Mb EDO DRAM and SDRAM.
- Separate buffer address pointers and automatic address calculation that save firmware effort.
- Read-ahead cache scheme for multimedia isochronous transfer.
- Protection logic preventing uncorrected sectors being released to the host.

Target Search

- Built-in target sector searching circuit for auto-searching the target sector.
- Automatic data buffering after the target sector has been located.

C3 ECC/EDC

- Programmable Reed-Solomon Product Code (RSPC) that allows different error correction schemes for CD-ROM.
- Built-in On-chip EDC function.
- Support up to 32X CD-ROM system with ECC correcting “on the fly”.

Host Interface

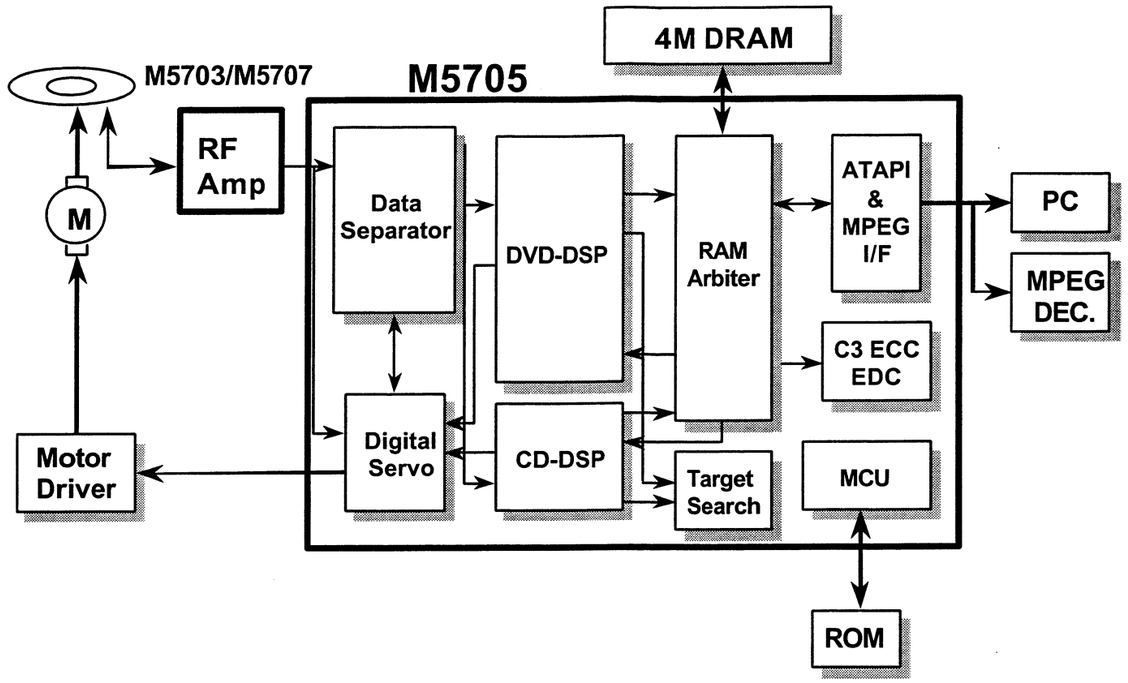
- Supports ATA PIO mode 4 timing
- Supports Multiword DMA mode 2 timing
- Compliant with SFF-8020(ATAPI) 2.5, ATA 3(Overlapping feature), and SFF-8090 (ATAPI for DVD) standard
- High current drivers with slew rate control for direct connecting to the ATA bus and noise immunity.
- Automatic Read Control Circuit for host data transfer.
- Automatic wake up from power down on host reset or command write
- Automatic sequence for packet command receiving and Automatic updating of the host task file registers
- Supports ATAPI write command that can let user update firmware from PC.
- Built-in authentication circuit for copy protection.
- Multiplexed MPEG decoder interface (local bus).

Microcontroller Interface

- Embedded microcontroller compatible with Intel 8032 command set
- Supports Intel 8032 series MCUs
- Supports Intel 8032 series MCUs and Hitachi H8 series MCUs.
- Supports automatically download firmware function directly from ATAPI interface to flash memory
- Supports “on-system” upgrade flash memory function from CD-R discs or ATAPI interface
- High speed register (buffer RAM) access to meet the requirement of high performance system
- Supports Direct mapped access to the buffer RAM using ready bit handshaking

11-2

M5705 (Ali) Application



11-3

/15705 Pins Descriptions

Pin Name	Pin No.	Type	Description
Servo Data Slicer Interface Pins			
XSRFIN	2	I / A	Analog RF signal input after passing through the equalizer.
XSIPIN	3	I / A	Inverting input pin of data slicer.
XSDSSLV	5	O / A	Slice level output pin.
XSRSLINT	6	I / A	Reference current setting pin for analog data slicer.
Servo DAC Interface Pins			
XSAWRC	8	O / A	Output for enlarge VCO range. Analog output from DAC buffer.
XSRFGC	9	O / A	RF gain control output.
XSEFGC	10	O / A	E,F gain control output.
XSFOCUS	11	O / A	Output voltage level for focusing buffer IC.
XSTRACK	12	O / A	Output voltage level for tracking buffer IC.
XSSLEG	13	O / A	Output voltage level for sledge buffer IC.
XSMOTOR	15	O / A	Output voltage level for spindle motor buffer IC.
Servo Comparator Interface Pins			
XSRFRPLP	17	I / A	High bandwidth low pass filter input for RFRP.
XSTELP	18	I / A	High bandwidth low pass filter input for TE.
Servo ADC Interface Pins			
XSVREF2	19	I / A	2.1V reference voltage input.
XSRFRP	20	I / A	RF ripple/envelope signal input.
XSTEXI	21	I / A	Tracking zero crossing input signal.
XSTEI	23	I / A	Tracking error input signal.
XSFEI	24	I / A	Focus error input signal.
XSCEI	25	I / A	1. Center error input signal. 2. Photo Interrupt Input.
XSSBAD	27	I / A	Sub-beam addition signal input.
Servo PLL Interface Pins			
XSPDIREF	166	I / A	Phase detector reference current generator. Connect a resistor between this pin and ground to set reference current.
XSFDIREF	167	I / A	Frequency detector reference current generator. Connect a resistor between this pin and ground to set reference current.
XSPLLFTR2	169	I / A	Data PLL loop filter pin #2.
XSFDO	171	O / A	Output node of frequency detector charge pump circuit.
XSFTROPI	172	I / A	Input node of loop filter OP circuit.
XSVR_PLL	173	I / A	PLL reference voltage input.
XSPDOFTR2	174	I / A	Phase detector filter pin #1.
XSVREFO	175	O / A	Reference voltage output.
XSAWRCVCO	176	I / A	Auto Wide Range ControlVCOinput pin. For enlarge VCO range in CAV mode.
Servo Control Interface Pins			
XSDFCT	29	I	Defect detection signal input.
XSCSJ	30	O	Chip select signal for accessing control registers.
XSCLK	31	O	Clock output for accessing control registers.
XSDATA	32	I/O	Registers data input/output pin.
XSLDC	33	O	Laser diode on/off control output for both CD/DVD.
XSFGIN	34	I	Motor Hall sensor input.
XSSPDON	35	O	Spindle motor on output.
XSFLAG[3:0]	36,37, 38,39	O	These pins are used to monitor some status of servo control block.

Pin Name	Pin No.	Type	Description
Microcontroller Interface Pins			
XGPIO[2:0]	48,51,5 2	I/O	1. These pins are used as general purpose I/O bus. 2. When use internal microcontroller, XGPIO[2] can be used as programmable I/O port 3.6.
XMP1_7	40	I/O	Internal microcontroller programmable I/O port 1.7.
XMP1_6	41	I/O	Internal microcontroller programmable I/O port 1.6.
XMP1_5	43	I/O	***This pin is now changed to be NC.***
XMP1_4	44	I/O	Internal microcontroller programmable I/O port 1.4.
XMP1_3	45	I/O	Internal microcontroller programmable I/O port 1.3.
XMP1_2	47	I/O	Internal microcontroller programmable I/O port 1.2.
XMP1_1	49	I/O	Internal microcontroller programmable I/O port 1.1.
XMP1_0	57	I/O	Internal microcontroller programmable I/O port 1.0. This pin is default used as the A16 (microcontroller address line 16).
XMFSCSJ	46	I/O	Output chip select connected to external flash ROM chip enable pin.
XMPSENJ	54	I/O	Output program store enable connected to external ROM PSENJ pin.
XMALE	56	I/O	This signal is used as address latch signal in address/data mux mode.
XMCSJ	70	I/O	1. This signal must be asserted for all microcontroller accesses to the registers of this chip. 2. When use internal microcontroller, this signal can be used as programmable I/O port 3.1.
XMRDJ	71	I/O	1. This signal is used as the Read Strobe signal. 2. When use internal microcontroller, this signal can be used as programmable I/O port 3.0.
XMWRJ	72	I/O	This signal is used as the Write Strobe signal.
XMINT1J	73	I/O	1. This signal is an interrupt line to the microcontroller. 2. When use internal microcontroller, this signal can be used as programmable I/O port 3.7.
XMA[15:0]	91, 90, 89, 87, 74, 75, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86	I/O	These pins are used as address bus.
XMD[7:0]	69, 68, 67, 66, 65, 64, 63, 62	I/O	These pins are used as data bus for the 16-bit processor mode, or the address/data mux bus for the 8-bit processor mode.
Miscellaneous Pins			
XTPLCK	163	I/O	**PLCK test pin.**
XTSLRF	164	I/O	**SLRF test pin.**
XOSC1	59	I	**Crystal input/ System clock.** The input frequency from outside crystal or oscillator is 33.8688Mhz.
XOSC2	60	O	**Crystal output.**
XCRSTJ	53	I	**Chip Reset.** An asserted lowinput generates a component reset that stops all operations within the chip and deasserts all output signals. All input/output signals are set to input.

11-4

M5705 Pins Descriptions

Pin Name	Pin No.	Type	Description
Host Interface Pins			
XHCS1J	94	I	This pin is used to select the command block task file registers.
XHCS3J	93	I	This pin is used to select the control block task file registers.
XHIORJ	103	I	Asserted by the host during a host I/O read operation.
XHIOWJ	104	I	Asserted by the host during a host I/O write operation.
XHDRQ	105	O	**1. DMA request**. This pin is configured as the DMA request signal, and is used during DMA transfer between the host and the controller. This pin is tri-stated when DMA transfers are not enabled. **2. MPEG acknowledge**. This pin is used as the ACKJ signal when MPEG interface mode is selected.
XHDACKJ	101	I	**1. DMA acknowledge**. This pin is configured as DACKJ, and is used as the DMA acknowledge signal during DMA data transfers. **2. MPEG request**. This pin is used as the REQ signal when MPEG interface mode is selected.
XHCS16J	99	O	**1. 16-bit data select**. This signal indicates that a 16-bit data transfer is active on the host data bus. This pin is open-drain tri-state output. **2. MPEG clock**. This pin is used as the CLOCK signal when MPEG interface mode is selected.
XHRSTJ	50	I	**Host Reset.** The reset of ATA bus
XHINT	100	O	**1. Host interrupt request**. This tri-state pin is the host interrupt request, and is asserted to indicate to the host that the controller needs attention. **2. MPEG begin**. This pin is used as the BEGIN signal when MPEG interface mode is selected.
XHPDIAGJ	97	I/O	This pin is used as the Passed Diagnostics signal, and may be an input or an open-drain output.
XHDASPJ	92	I/O	This pin is used as the Drive Active/ Slave Present signal, and is an input or an open-drain output. This pin is used for Master/Slave drive communication and/or for driving an LED.
XHIORDY	102	O	**1. I/O channel ready**. This signal is driven low to extend host transfer cycles when the controller is not ready to respond. This pin will be tri-stated when a read or write is not in progress. **2. MPEG error**. This pin is used as the ERROR signal when MPEG interface mode is selected.
XHA[2:0]	95, 98, 96	I	**Host address lines**. The host address lines A[2:0] are used to access the various host control, status, and data registers.
XHD[15:0]	106, 108, 111, 113, 116, 118, 120, 122, 123, 121, 119, 117, 114, 112, 109, 107	I/O	**1. Host data bus**. This bus is used to transfer data and status between the host and the controller. **2. MPEG data bus 7-0**. The HD[7:0] are used as the DATA[7:0] when MPEG interface mode is selected. **3. VCD I/F.** Bit3-0 are used as VCD I/F signal when VCD function is enabled. The relationship of bit3-0 and VCD I/F is as follow. HD0 → CD-DATA HD1 → CD-LRCK HD2 → CD-BCK HD3 → CD-C2PO

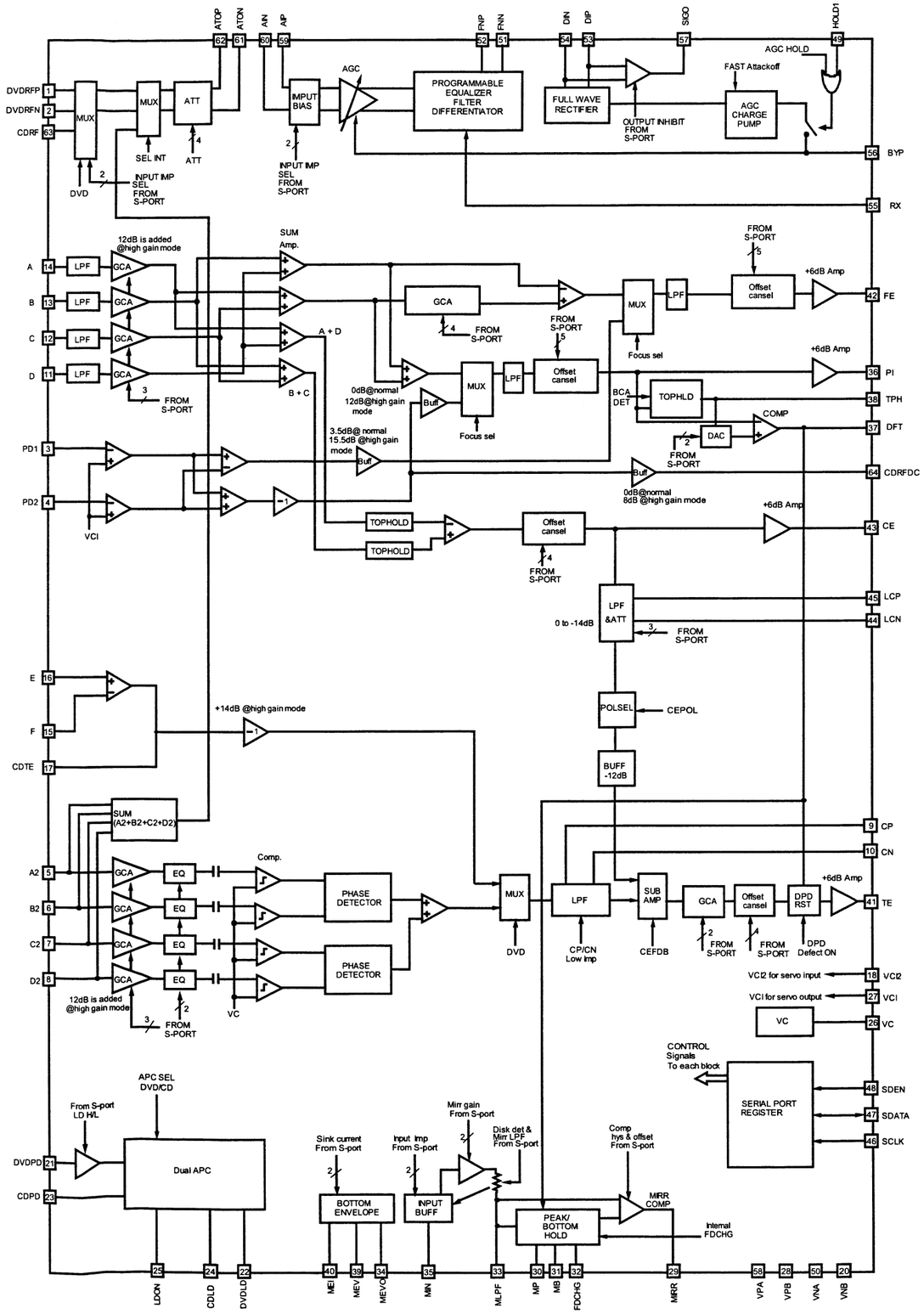
Pin Name	Pin No.	Type	Description
RAM Interface Pins			
XRSDCLK	143	O	This signal is the clock output for SDRAM.
XROEJ	147	O	This signal is used as the memory output enable for external DRAM buffers. After RSTJ is asserted, this signal will be low.
XRWEJ	142	O	This signal is asserted low when a buffer memory write operation is active.
XRRASJ	144	O	This signal is used as Row address output to external DRAM buffer. After RSTJ is asserted, this signal will be high.
XRCASJ	145	O	This signal is used as column address output to external DRAM. After RSTJ is asserted, this signal will be high.
XRA[11:0]	151, 152, 148, 149, 153, 155, 156, 157, 161, 160, 159, 158	O	**1. RAM address lines**. These are bits 11-0 for addressing the buffer memory. **2. Hardware setting**. The bits 6-0 are used as hardware setting for some functions. RA[9] : FLASH size is 64K/128K 1 : FLASH size is 64K. 0 : FLASH size is 128K. RA[8] : External CPU is 8032/H8 1 : 8032 0 : H8 RA[7] : Microcontroller programmable I/O port 1 pin control 1 : By internal microcontroller. 0 : By registers to decide input/output. RA[6] : System testpin output. 1 : Normal operation. 0 : System test pin output. RA[5] : For testing purpose, don't need to set RA[4] : IDE master/slave. 1 : Slave. 0 : Master. RA[3] : For testing purpose, don't need to set RA[2] : For testing purpose, don't need to set RA[1-0] : MCU Mode selection. 11 : Normal Mode (internal uP,internal address latch). 10 : Outside uP Mode (ICE Mode). 01 : Test mode for internal uP testing. 00 : Internal uP mode with external address latch.
XRD[15:0]	124, 126, 128, 131, 133, 135, 137, 140, 141, 139, 136, 134, 132, 129, 127, 125	I/O	These signals are the 8-bit parallel data lines to/from the buffer memory.

/15705 Pins Descriptions

Pin Name	Pin No.	Description
Power Pins		
AVDD5_DS	4	Analog Power +5V for Data Slicer part.
AVDD5_DA	14	Analog Power +5V for DAC part.
AVDD5_AD	26	Analog Power +5V for ADC part.
AVDD5_PL	168	Analog Power +5V for Data PLL part.
VDD	7,55,58, 76,115, 146,150, 162	Power + 3.3V for digital core logic and pad.
AVSS_DS	1	Analog Ground for Data Slicer part.
AVSS_DA	16	Analog Ground for DAC part.
AVSS_AD	22	Analog Ground for ADC part.
AVSS_PL	170	Analog Ground for Data PLL part.
GND	28,42,61, 88,110, 130,138, 154,165	Digital Ground for core logic and pad.

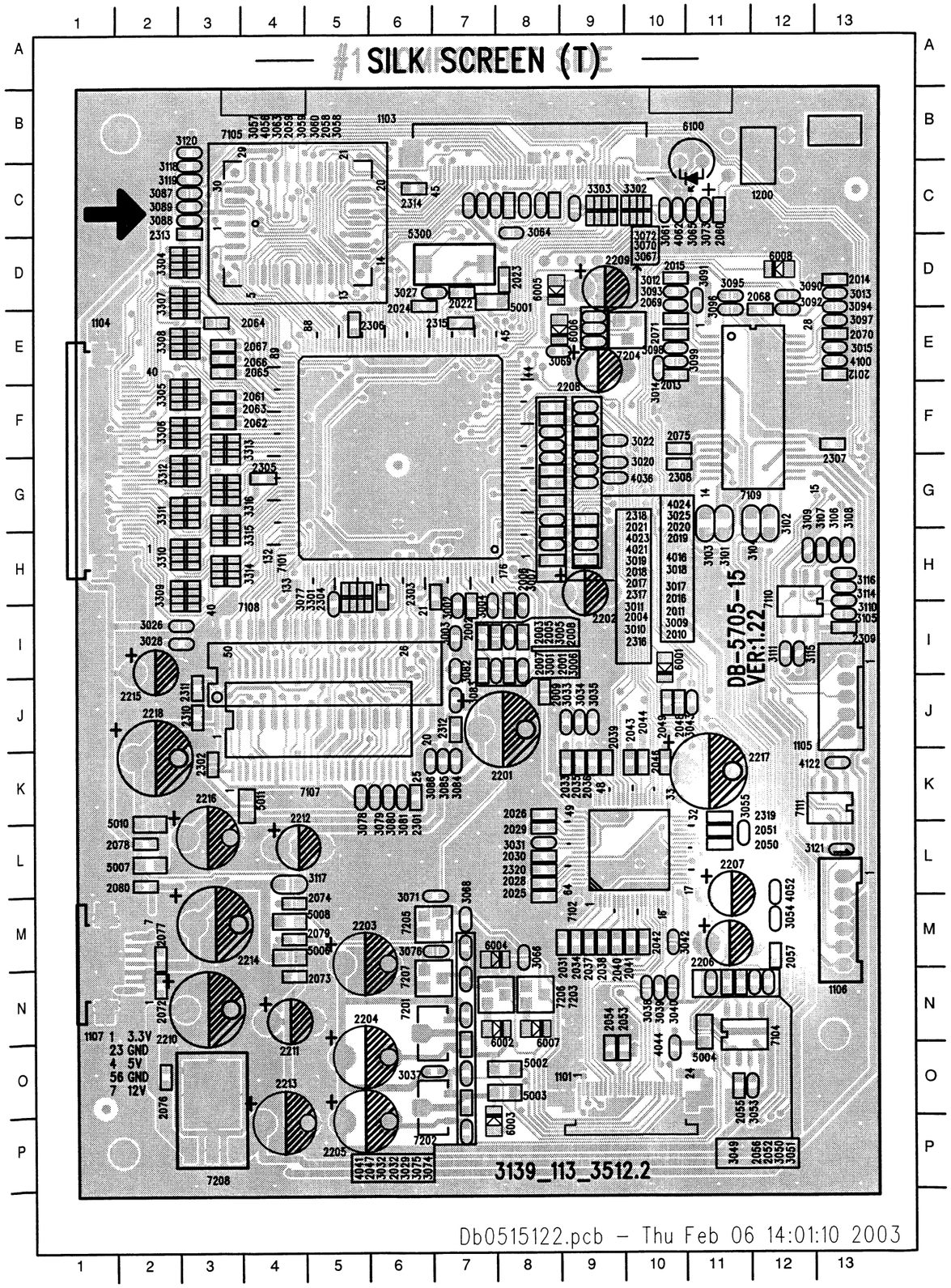
11-5

SP32721A Internal Block Diagram



11-6

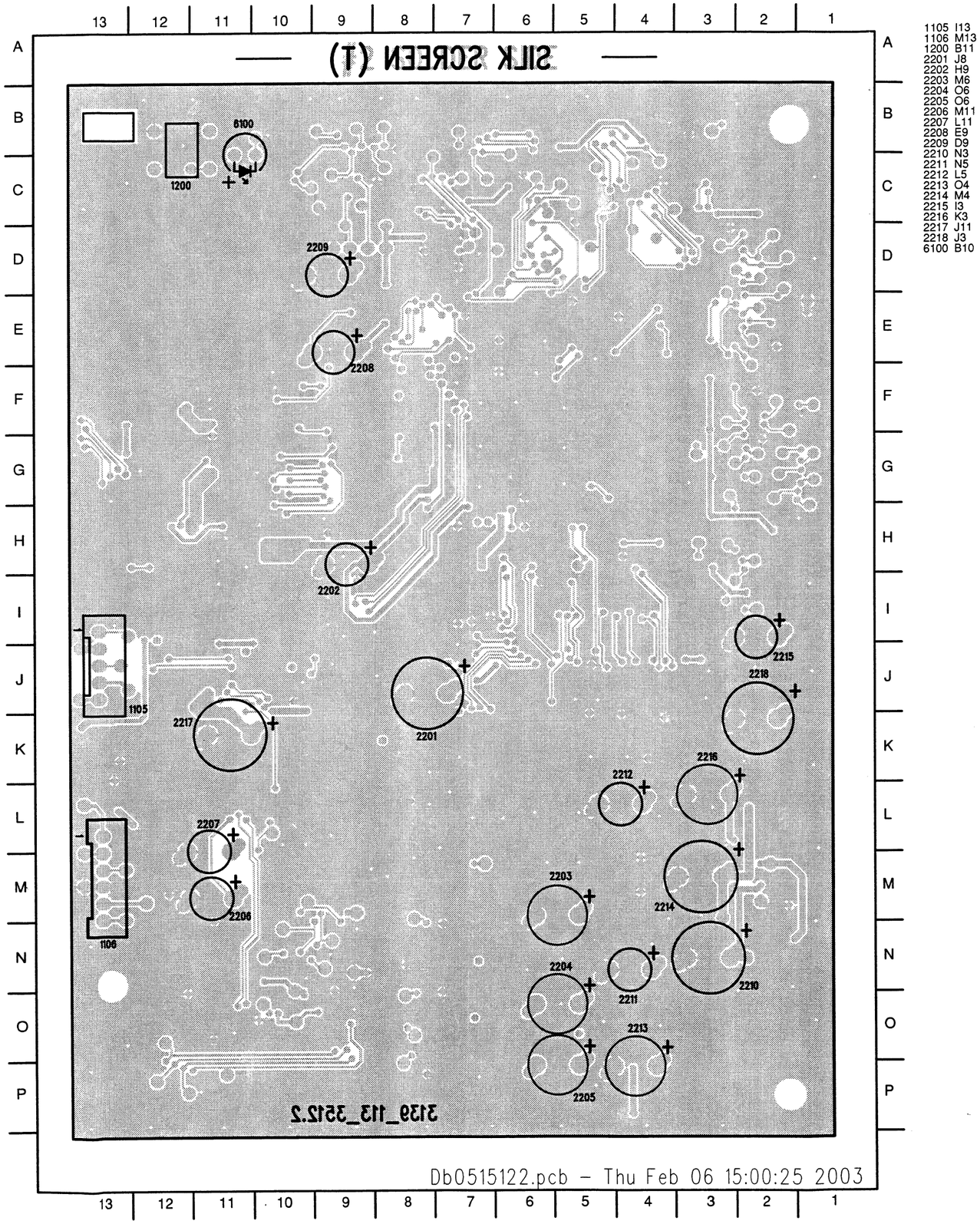
TOP VIEW - SMD & COMPONENT LAYOUT



1101	O9	2310	J3	3301	H6
1102	C9	2311	I3	3302	C10
1103	B8	2312	J7	3303	C9
1104	F2	2313	C3	3304	C3
1105	I13	2314	B6	3305	E3
1106	M13	2315	D7	3306	F3
1107	M2	2316	G8	3307	D3
1200	B11	2317	G8	3308	D3
2001	I8	2318	E8	3309	H3
2002	H7	2319	K11	3310	G3
2003	I7	2320	L8	3311	G3
2004	G8	3001	I8	3312	F3
2005	I8	3002	H7	3313	F4
2006	H8	3003	I7	3314	H4
2007	I7	3004	H7	3315	G4
2008	I8	3005	I8	3316	F4
2009	I8	3006	I8	4016	F9
2010	G9	3007	H8	4021	F8
2011	G9	3009	G9	4023	F8
2012	E12	3010	G8	4024	E9
2013	E10	3011	G8	4036	F9
2014	D12	3012	D10	4041	P7
2015	C10	3013	D12	4044	N10
2016	G9	3014	E10	4052	L12
2017	F8	3015	D12	4056	B7
2018	F8	3017	F9	4062	C10
2019	F9	3018	F9	4100	E12
2020	F9	3019	F8	4122	J12
2021	E8	3020	F9	5001	D7
2022	D7	3022	F9	5002	O8
2023	D8	3025	E9	5003	O8
2024	D7	3026	H3	5004	N11
2025	L8	3027	D7	5006	M5
2026	K8	3028	I3	5007	L3
2028	L8	3029	N7	5008	M5
2029	K8	3031	K8	5010	K3
2030	L8	3032	O7	5011	K4
2031	M8	3033	J9	5300	C7
2032	N7	3034	J9	6001	I10
2033	J9	3035	J9	6002	N8
2034	M9	3037	O7	6003	O7
2035	J9	3038	N10	6004	M8
2036	J9	3039	N10	6005	D8
2037	M9	3040	N10	6006	D8
2038	M9	3042	M10	6007	N8
2039	J9	3043	J10	6008	C12
2040	M9	3049	M11	6100	B10
2041	M9	3050	M11	7101	F6
2042	M10	3051	M11	7102	L9
2043	J9	3053	O11	7104	N11
2044	J10	3054	M12	7105	C5
2046	J10	3055	K11	7107	J5
2047	O7	3057	B7	7108	I5
2048	J10	3058	C9	7109	E11
2049	J10	3059	B8	7110	H12
2050	L11	3060	B8	7111	K12
2051	K11	3061	C10	7201	N7
2052	M11	3063	B8	7202	O7
2053	N9	3064	C8	7203	N8
2054	N9	3065	C10	7204	D9
2055	O11	3066	M8	7205	M7
2056	M11	3067	D9	7206	N8
2057	M12	3068	M7	7207	M7
2058	B8	3069	E8	7208	O3
2059	B8	3070	D9		
2060	C11	3071	L7		
2061	E4	3072	D9		
2062	F4	3073	C11		
2063	E4	3074	M7		
2064	D4	3075	M7		
2065	E4	3076	M7		
2066	E4	3077	H5		
2067	D4	3078	K6		
2068	D11	3079	K6		
2069	D10	3080	K6		
2070	D12	3081	K6		
2071	D10	3082	I7		
2072	M3	3083	I7		
2073	M5	3084	J7		
2074	L5	3085	J7		
2075	F10	3086	J7		
2076	O3	3087	B3		
2077	M3	3088	C3		
2078	K2	3089	B3		
2079	M5	3090	D12		
2080	L2	3091	D10		
2201	J8	3092	D12		
2202	H9	3093	D10		
2203	M6	3094	D12		
2204	O6	3095	D11		
2205	O6	3096	D11		
2206	M11	3097	D12		
2207	L11	3098	D10		
2208	E9	3099	E10		
2209	D9	3101	G11		
2210	N3	3102	G11		
2211	N5	3103	G11		
2212	L5	3104	G11		
2213	O4	3105	H13		
2214	M4	3106	G12		
2215	I3	3107	G12		
2216	K3	3108	G13		
2217	J11	3109	G12		
2218	J3	3110	H13		
2301	K6	3111	I12		
2302	J3	3114	H13		
2303	H7	3115	I12		
2304	H6	3116	H13		
2305	F4	3117	L5		
2306	D6	3118	B3		
2307	F12	3119	B3		
2308	F10	3120	B3		
2309	H13	3121	L13		

11-7

BOTTOM VIEW - COMPONENT LAYOUT

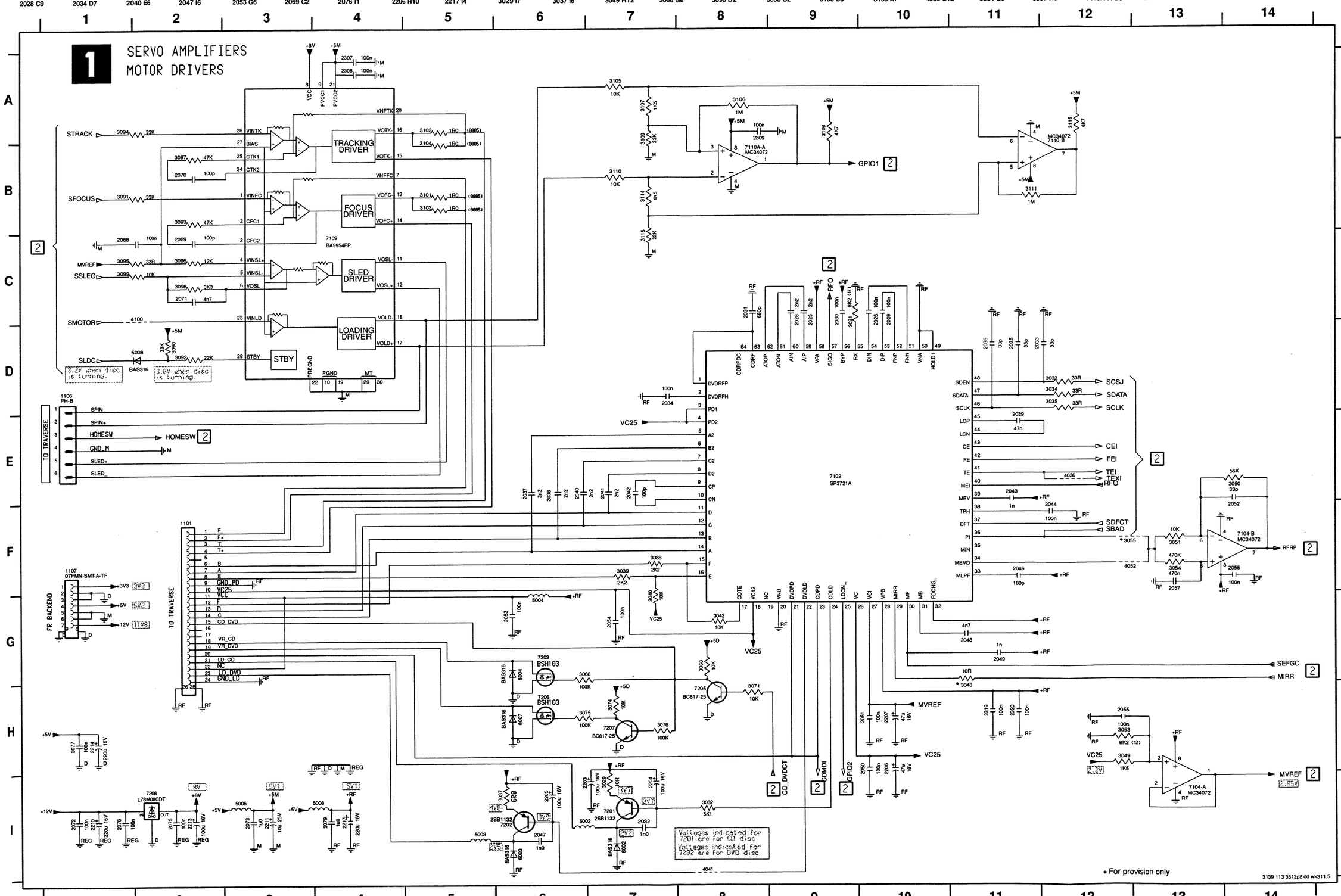


1105 I13
1106 M13
1200 B11
2201 J8
2202 H9
2203 M6
2204 O6
2205 O6
2206 M11
2207 L11
2208 E9
2209 D9
2210 N3
2211 N5
2212 L5
2213 O4
2214 M4
2215 I3
2216 K3
2217 J11
2218 J3
6100 B10

11-8

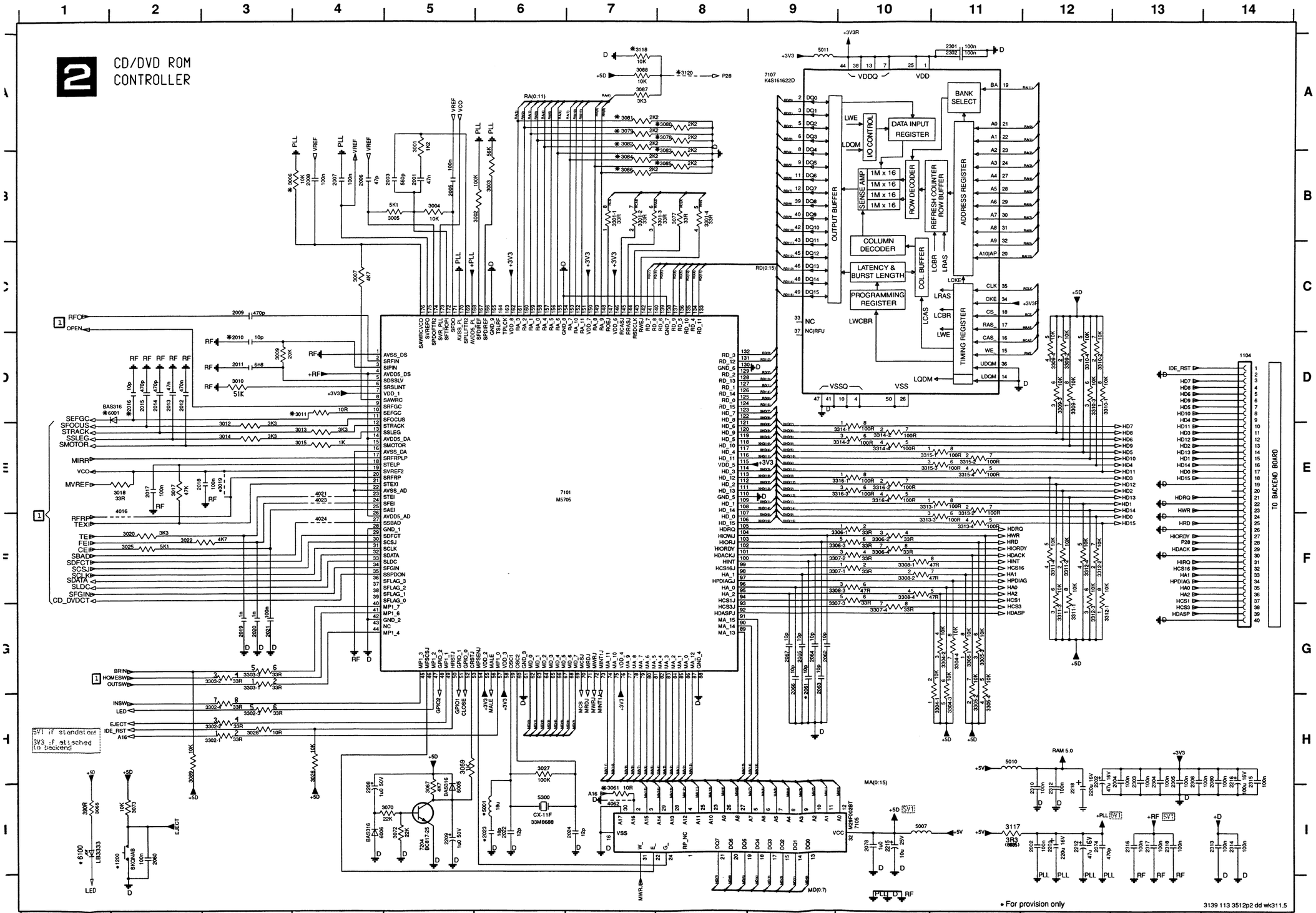
SERVO AMPLIFIERS & MOTOR DRIVERS CIRCUIT

1101 F2, 1106 D1, 1107 F1, 2025 C9, 2026 C10, 2028 C9, 2029 C10, 2030 C9, 2031 C8, 2032 I7, 2033 D11, 2034 D7, 2035 D11, 2036 D11, 2037 E6, 2038 E6, 2039 E11, 2040 E6, 2041 E7, 2042 E7, 2043 E11, 2044 F12, 2046 F11, 2047 I6, 2048 G11, 2049 G11, 2050 H10, 2051 H10, 2052 F14, 2053 G6, 2054 G7, 2055 H12, 2056 F14, 2057 F13, 2068 C1, 2069 C2, 2070 B2, 2071 C2, 2072 I1, 2073 I3, 2075 I2, 2076 I1, 2077 H1, 2079 I4, 2203 I6, 2204 I7, 2205 I6, 2206 H10, 2207 H10, 2210 I1, 2211 I3, 2213 I2, 2214 H1, 2217 I4, 2307 A4, 2308 A4, 2309 A8, 2319 H11, 2320 H11, 3029 I7, 3031 D9, 3032 I8, 3033 D12, 3034 D12, 3035 D12, 3037 I6, 3038 F7, 3039 I4, 3040 G7, 3042 G8, 3043 H11, 3049 H12, 3050 E14, 3051 F13, 3053 H12, 3054 F13, 3055 F12, 3066 G6, 3068 G8, 3071 H8, 3074 H7, 3075 H6, 3076 H7, 3090 D2, 3091 B1, 3092 D2, 3093 B2, 3094 A1, 3095 C1, 3096 C2, 3097 B2, 3098 C2, 3099 C1, 3101 B5, 3102 A5, 3103 B5, 3104 B5, 3105 A7, 3106 A8, 3107 A7, 3108 A9, 3109 A7, 3110 B7, 3111 B11, 3114 B7, 3115 A12, 3116 C7, 4036 E12, 4041 I8, 4052 F12, 4100 C2, 5002 I6, 5003 I5, 5004 G6, 5006 I3, 5008 I4, 6003 I6, 6004 G6, 6007 H6, 6008 D2, 7102 E9, 7104-A I13, 7104-B F14, 7110-B A12, 7110A-A B8, 7201 I7, 7202 I6, 7203 G6, 7205 H8, 7206 H6, 7207 H7, 7208 I2



11-9

CD/DVD ROM CONTROLLER CIRCUIT



1104 D14	3304-1 G11
1200 I2	3304-2 G11
2001 B5	3304-3 G11
2002 I12	3304-4 G11
2003 B5	3305-1 G11
2004 H13	3305-2 H11
2005 B5	3305-3 G11
2006 B4	3305-4 H11
2007 B4	3306-1 F10
2008 B4	3306-2 F10
2009 C3	3306-3 F10
2010 D3	3306-4 F10
2011 D3	3307-1 F10
2012 D2	3307-2 F10
2013 D2	3307-3 G10
2014 D2	3307-4 G10
2015 D2	3308-1 F10
2016 D2	3308-2 F10
2017 E2	3308-3 F10
2018 E2	3308-4 F10
2019 G3	3309-1 D12
2020 G3	3309-2 D12
2021 G3	3309-3 D12
2022 I6	3309-4 D12
2023 I6	3310-1 D12
2024 I7	3310-2 D12
2060 I2	3310-3 D12
2061 G9	3310-4 D12
2062 G9	3311-1 G12
2063 G9	3311-2 F12
2064 G9	3311-3 G12
2065 G9	3311-4 F12
2066 G9	3312-1 G12
2067 G9	3312-2 F12
2074 I12	3312-3 G12
2078 I10	3312-4 F12
2080 H14	3313-1 E10
2201 I12	3313-2 F11
2202 H12	3313-3 F10
2208 I4	3313-4 F11
2209 I5	3314-1 E10
2212 I12	3314-2 E10
2215 I10	3314-3 E10
2216 H14	3314-4 E10
2218 I12	3315-1 E10
2301 A11	3315-2 E11
2302 A11	3315-3 E10
2303 H13	3315-4 E11
2304 H13	3316-1 E10
2305 H13	3316-2 E10
2306 H13	3316-3 E10
2310 I12	3316-4 E10
2312 I12	4016 F2
2313 I14	4021 E4
2314 I14	4023 E4
2315 H14	4024 F4
2316 I13	4062 I7
2317 I13	5001 I6
2318 I13	5007 I10
3001 A5	5010 H11
3002 B6	5011 A9
3003 B6	5300 I6
3004 B5	6001 D2
3005 B5	6005 I5
3006 B4	6006 I4
3007 C4	6100 I1
3009 D3	7101 E7
3010 D3	7105 I10
3011 D4	7204 I5
3012 E3	
3013 E4	
3014 E3	
3015 E4	
3017 E2	
3018 E2	
3019 E3	
3020 F2	
3022 F2	
3025 F2	
3026 H4	
3027 H6	
3028 H3	
3061 I7	
3065 I1	
3067 I5	
3069 H5	
3070 I5	
3072 I5	
3073 I2	
3077 B8	
3078 A8	
3079 A7	
3080 A8	
3081 A7	
3082 A7	
3083 B8	
3084 B7	
3085 B8	
3086 B7	
3087 A7	
3088 A7	
3089 H2	
3117 I11	
3118 A7	
3120 A8	
3301-1 B7	
3301-2 B7	
3301-3 B8	
3301-4 B8	
3302-1 H3	
3302-2 H3	
3302-3 H3	
3302-4 H3	
3303-1 G3	
3303-2 G3	
3303-3 G3	

ELECTRICAL PARTS LIST - MONO-FE BOARD

MISCELLANEOUS

	3139 118 56941	FE (Front End) PCB Assembly CD222
1101	2422 025 17529	FFC Socket 24P Hort.
1104	2422 025 17371	FFC Socket 40P Hort.
1107	2422 025 16806	FFC Socket 7P Hort.

CAPACITORS

2001	3198 017 34730	47nF 16V
2002	2238 586 59812	100nF 50V
2003	4822 126 14249	560pF 10% 50V
2004	2238 586 59812	100nF 50V
2005	2238 586 59812	100nF 50V
2006	4822 126 11785	47pF 5% 50V
2007	2238 586 59812	100nF 50V
2008	2238 586 59812	100nF 50V
2009	4822 126 13881	470pF 5% 50V
2011	5322 126 11582	6,8nF 10% 63V
2012	3198 017 44740	470nF 10V
2013	3198 017 34730	47nF 16V
2014	4822 126 13881	470pF 5% 50V
2015	4822 126 13881	470pF 5% 50V
2017	2238 586 59812	100nF 50V
2018	2238 586 59812	100nF 50V
2019	3198 016 31020	1nF 25V
2020	3198 016 31020	1nF 25V
2021	2238 586 59812	100nF 50V
2022	4822 126 11663	12pF 50V
2024	4822 126 11663	12pF 50V
2025	4822 126 14238	2,2nF 50V
2026	2238 586 59812	100nF 50V
2028	4822 126 14238	2,2nF 50V
2029	2238 586 59812	100nF 50V
2030	2238 586 59812	100nF 50V
2031	3198 016 36810	680pF 25V
2032	3198 016 31020	1nF 25V
2033	2222 867 15339	33pF 5% 50V
2034	2238 586 59812	100nF 50V
2035	2222 867 15339	33pF 5% 50V
2036	2222 867 15339	33pF 5% 50V
2037	4822 126 14238	2,2nF 50V
2038	4822 126 14238	2,2nF 50V
2039	3198 017 34730	47nF 16V
2040	4822 126 14238	2,2nF 50V
2041	4822 126 14238	2,2nF 50V
2042	2020 552 94427	100pF 5% 50V
2043	3198 016 31020	1nF 25V
2044	2238 586 59812	100nF 50V
2046	4822 126 14508	180pF 5% 50V
2047	3198 016 31020	1nF 25V
2048	4822 126 13193	4,7nF 10% 63V
2049	3198 016 31020	1nF 25V
2050	2238 586 59812	100nF 50V
2051	2238 586 59812	100nF 50V
2052	2222 867 15339	33pF 5% 50V
2053	2238 586 59812	100nF 50V
2054	2238 586 59812	100nF 50V
2055	2238 586 59812	100nF 50V
2056	2238 586 59812	100nF 50V
2057	3198 017 44740	470nF 10V
2058	4822 126 11785	47pF 5% 50V
2059	4822 126 11785	47pF 5% 50V
2060	2238 586 59812	100nF 50V
2062	4822 122 33741	10pF 10% 50V
2063	4822 122 33741	10pF 10% 50V
2064	4822 122 33741	10pF 10% 50V
2065	4822 122 33741	10pF 10% 50V
2066	4822 122 33741	10pF 10% 50V
2067	4822 122 33741	10pF 10% 50V
2068	2238 586 59812	100nF 50V
2069	2020 552 94427	100pF 5% 50V
2070	2020 552 94427	100pF 5% 50V
2071	4822 126 13193	4,7nF 10% 63V
2072	2238 586 59812	100nF 50V
2073	3198 017 41050	1uF 10V
2074	4822 126 13881	470pF 5% 50V
2075	2238 586 59812	100nF 50V
2076	2238 586 59812	100nF 50V
2077	2238 586 59812	100nF 50V
2078	3198 017 41050	1uF 10V
2079	3198 017 41050	1uF 10V
2080	2238 586 59812	100nF 50V
2201	2022 020 00625	220uF 20% 16V
2202	4822 124 80231	47uF 20% 16V
2203	4822 124 23052	100uF 20% 16V
2204	4822 124 23052	100uF 20% 16V
2205	4822 124 23052	100uF 20% 16V
2206	4822 124 80231	47uF 20% 16V
2207	4822 124 80231	47uF 20% 16V
2208	4822 124 22651	1uF 20% 50V
2209	4822 124 22651	1uF 20% 50V
2210	2022 020 00625	220uF 20% 16V
2211	4822 124 21732	10uF 20% 25V
2212	4822 124 80231	47uF 20% 16V
2213	4822 124 23052	100uF 20% 16V
2214	2022 020 00625	220uF 20% 16V
2215	4822 124 21732	10uF 20% 25V
2216	4822 124 23052	100uF 20% 16V
2217	2022 020 00625	220uF 20% 16V
2218	2022 020 00625	220uF 20% 16V
2301	2238 586 59812	100nF 50V
2302	2238 586 59812	100nF 50V
2303	2238 586 59812	100nF 50V
2304	2238 586 59812	100nF 50V
2305	2238 586 59812	100nF 50V
2306	2238 586 59812	100nF 50V

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ELECTRICAL PARTS LIST - MONO-FE BOARD

2307	2238 586 59812	100nF 50V
2308	2238 586 59812	100nF 50V
2309	2238 586 59812	100nF 50V
2310	2238 586 59812	100nF 50V
2312	2238 586 59812	100nF 50V
2313	2238 586 59812	100nF 50V
2314	2238 586 59812	100nF 50V
2315	2238 586 59812	100nF 50V
2316	2238 586 59812	100nF 50V
2317	2238 586 59812	100nF 50V
2318	2238 586 59812	100nF 50V
2319	2238 586 59812	100nF 50V
2320	2238 586 59812	100nF 50V

RESISTORS

3001	4822 117 11817	1k2 1% 1/16W
3002	4822 117 13632	100k 1% 0,062W
3003	4822 051 30563	56k 5% 0,062W
3004	4822 051 30103	10k 5% 0,062W
3005	2322 704 65102	5k1 1% 0,062W
3007	4822 051 30472	4k7 5% 0,062W
3009	2322 704 62003	20k 1% 0,062W
3010	2322 704 65103	51k 1% 0,062W
3012	4822 051 30332	3k3 5% 0,062W
3013	4822 051 30332	3k3 5% 0,062W
3014	4822 051 30332	3k3 5% 0,062W
3015	4822 051 30102	1k 5% 0,062W
3017	4822 117 12925	47k 1% 0.063W
3018	4822 051 30339	33R 5% 0,062W
3020	4822 051 30332	3k3 5% 0,062W
3022	4822 051 30472	4k7 5% 0,062W
3025	2322 704 65102	5k1 1% 0,062W
3026	4822 051 30103	10k 5% 0,062W
3027	4822 117 13632	100k 1% 0,062W
3028	4822 051 30109	10R 5% 0,062W
3029	4822 051 30109	10R 5% 0,062W
3031	5322 117 13056	8k2 1% 0,063W
3032	2322 704 65102	5k1 1% 0,062W
3033	4822 051 30339	33R 5% 0,062W
3034	4822 051 30339	33R 5% 0,062W
3035	4822 051 30339	33R 5% 0,062W
3037	2322 702 60688	6R8 5% 0.062W
3038	4822 051 30222	2k2 5% 0,062W
3039	4822 051 30222	2k2 5% 0,062W
3040	4822 051 30103	10k 5% 0,062W
3042	4822 051 30103	10k 5% 0,062W
3049	4822 051 30152	1k5 5% 0,062W
3050	4822 051 30563	56k 5% 0,062W
3051	4822 051 30103	10k 5% 0,062W
3053	5322 117 13056	8k2 1% 0,063W
3054	4822 051 30474	470k 5% 0,062W
3059	4822 051 30339	33R 5% 0,062W
3060	4822 051 30339	33R 5% 0,062W
3065	4822 051 30391	390R 5% 0,062W
3066	4822 117 13632	100k 1% 0,062W
3067	4822 051 30472	4k7 5% 0,062W
3068	4822 051 30103	10k 5% 0,062W
3069	4822 051 30102	1k 5% 0,062W
3070	4822 051 30223	22k 5% 0,062W
3071	4822 051 30103	10k 5% 0,062W
3072	4822 051 30223	22k 5% 0,062W
3073	4822 051 30103	10k 5% 0,062W
3074	4822 051 30103	10k 5% 0,062W
3075	4822 117 13632	100k 1% 0,062W
3076	4822 117 13632	100k 1% 0,062W
3077	4822 051 30339	33R 5% 0,062W
3087	4822 051 30332	3k3 5% 0,062W
3088	4822 051 30103	10k 5% 0,062W
3089	4822 051 30103	10k 5% 0,062W
3090	4822 051 30333	33k 5% 0,062W
3091	4822 051 30333	33k 5% 0,062W
3092	4822 051 30223	22k 5% 0,062W
3093	4822 117 12925	47k 1% 0.063W
3094	4822 051 30333	33k 5% 0,062W
3095	4822 051 30339	33R 5% 0,062W
3096	4822 051 30123	12k 5% 0,062W
3097	4822 117 12925	47k 1% 0.063W
3098	4822 051 30332	3k3 5% 0,062W
3099	4822 051 30103	10k 5% 0,062W
3101	4822 051 20108	1R 5% 0,1W
3102	4822 051 20108	1R 5% 0,1W
3103	4822 051 20108	1R 5% 0,1W
3104	4822 051 20108	1R 5% 0,1W
3105	4822 051 30103	10k 5% 0,062W
3106	4822 051 30105	1M 5% 0,062W
3107	4822 051 30152	1k5 5% 0,062W
3108	4822 051 30472	4k7 5% 0,062W
3109	4822 051 30223	22k 5% 0,062W
3110	4822 051 30103	10k 5% 0,062W
3111	4822 051 30105	1M 5% 0,062W
3114	4822 051 30152	1k5 5% 0,062W
3115	4822 051 30472	4k7 5% 0,062W
3116	4822 051 30223	22k 5% 0,062W
3117	4822 051 20338	3R30 5% 0,1W
3301	4822 117 13576	RES NETWORK 4 X 33R 5% 1206
3302	4822 117 13576	RES NETWORK 4 X 33R 5% 1206
3303	4822 117 13576	RES NETWORK 4 X 33R 5% 1206
3304	4822 117 13578	RES NETWORK 4 X 10k 5% 1206
3305	4822 117 13578	RES NETWORK 4 X 10k 5% 1206
3306	4822 117 13576	RES NETWORK 4 X 33R 5% 1206
3307	4822 117 13576	RES NETWORK 4 X 33R 5% 1206
3308	4822 117 13573	RES NETWORK 4 X 47R 5% 1206
3309	4822 117 13578	RES NETWORK 4 X 10k 5% 1206
3310	4822 117 13578	RES NETWORK 4 X 10k 5% 1206

ELECTRICAL PARTS LIST - MONO-FE BOARD

RESISTORS

3311	4822 117 13578	RES NETWORK 4 X 10k 5% 1206
3312	4822 117 13578	RES NETWORK 4 X 10k 5% 1206
3313	3198 031 11010	RST NETWORK 4 X 100R 5% 1206
3314	3198 031 11010	RST NETWORK 4 X 100R 5% 1206
3315	3198 031 11010	RST NETWORK 4 X 100R 5% 1206
3316	3198 031 11010	RST NETWORK 4 X 100R 5% 1206
4016	4822 051 30008	0R JUMPER 0603
4021	4822 051 30008	0R JUMPER 0603
4023	4822 051 30008	0R JUMPER 0603
4024	4822 051 30008	0R JUMPER 0603
4036	4822 051 30008	0R JUMPER 0603
4041	4822 051 30008	0R JUMPER 0603
4044	4822 051 30008	0R JUMPER 0603
4052	4822 051 30008	0R JUMPER 0603
4056	4822 051 30008	0R JUMPER 0603
4062	4822 051 30008	0R JUMPER 0603
4100	4822 051 30008	0R JUMPER 0603

COILS & FILTERS

5002	4822 157 71206	IND FXD 100MHZ 600R
5003	4822 157 71206	IND FXD 100MHZ 600R
5004	4822 157 71206	IND FXD 100MHZ 600R
5006	4822 157 71206	IND FXD 100MHZ 600R
5007	4822 157 71206	IND FXD 100MHZ 600R
5008	4822 157 71206	IND FXD 100MHZ 600R
5010	4822 157 71206	IND FXD 100MHZ 600R
5011	4822 157 71206	IND FXD 100MHZ 600R
5300	4822 242 10757	X'TAL RESONATOR 33,868MHZ 20P

DIODES

6002	4822 130 11397	BAS316
6003	4822 130 11397	BAS316
6004	4822 130 11397	BAS316
6005	4822 130 11397	BAS316
6006	4822 130 11397	BAS316
6007	4822 130 11397	BAS316
6008	4822 130 11397	BAS316

TRANSISTORS & INTEGRATED CIRCUITS

7101	9322 186 11671	M5705
7102	9322 185 60671	SP3721AAA0PM
7104	4822 209 32073	MC34072D
7105	9965 000 19029	M29F002BT-70K1 with SW program
7107	9322 159 55668	K4S161622D-TC70
7109	9322 187 63668	BA5954FP
7110	4822 209 32073	MC34072D
7201	4822 130 11565	2SB1132
7202	4822 130 11565	2SB1132
7203	9340 547 13215	BSH103
7204	4822 130 42804	BC817-25
7205	4822 130 42804	BC817-25
7206	9340 547 13215	BSH103
7207	4822 130 42804	BC817-25
7208	9322 163 24668	L78M08CDT

Note: Only the parts mentioned in this list are normal service spare parts.

MONO-BE BOARD

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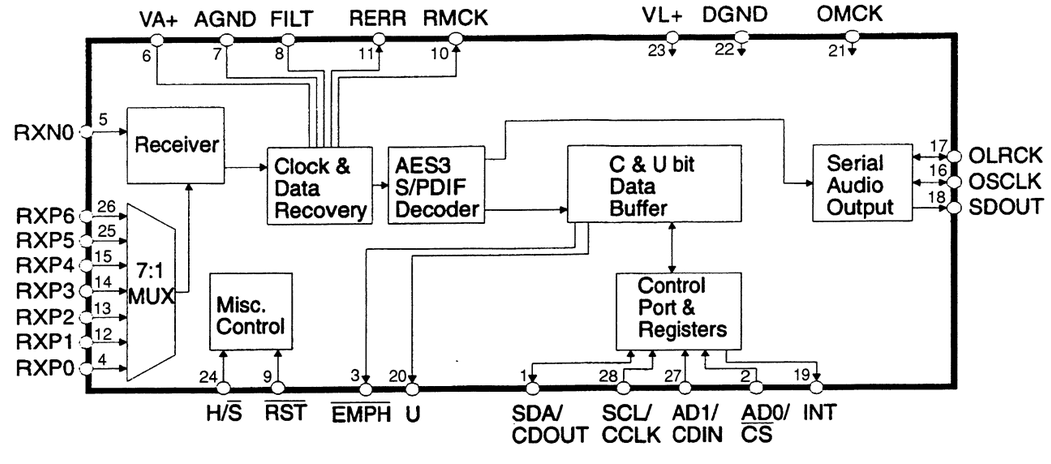
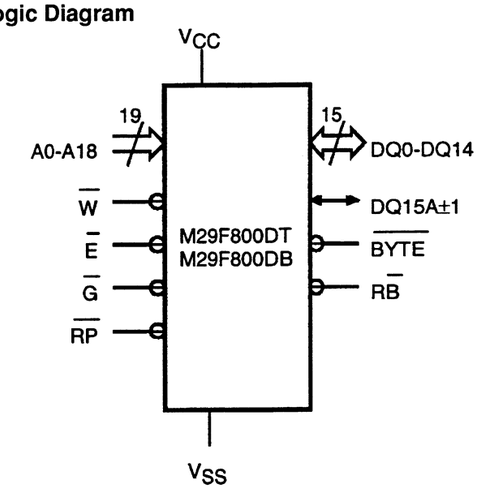
Electrical parts list 12-7

CS8415A



M29F800DT

Logic Diagram



Pins connection

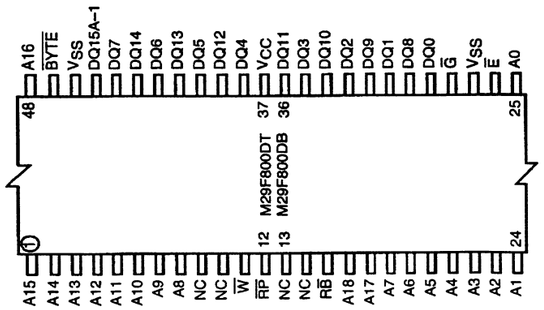
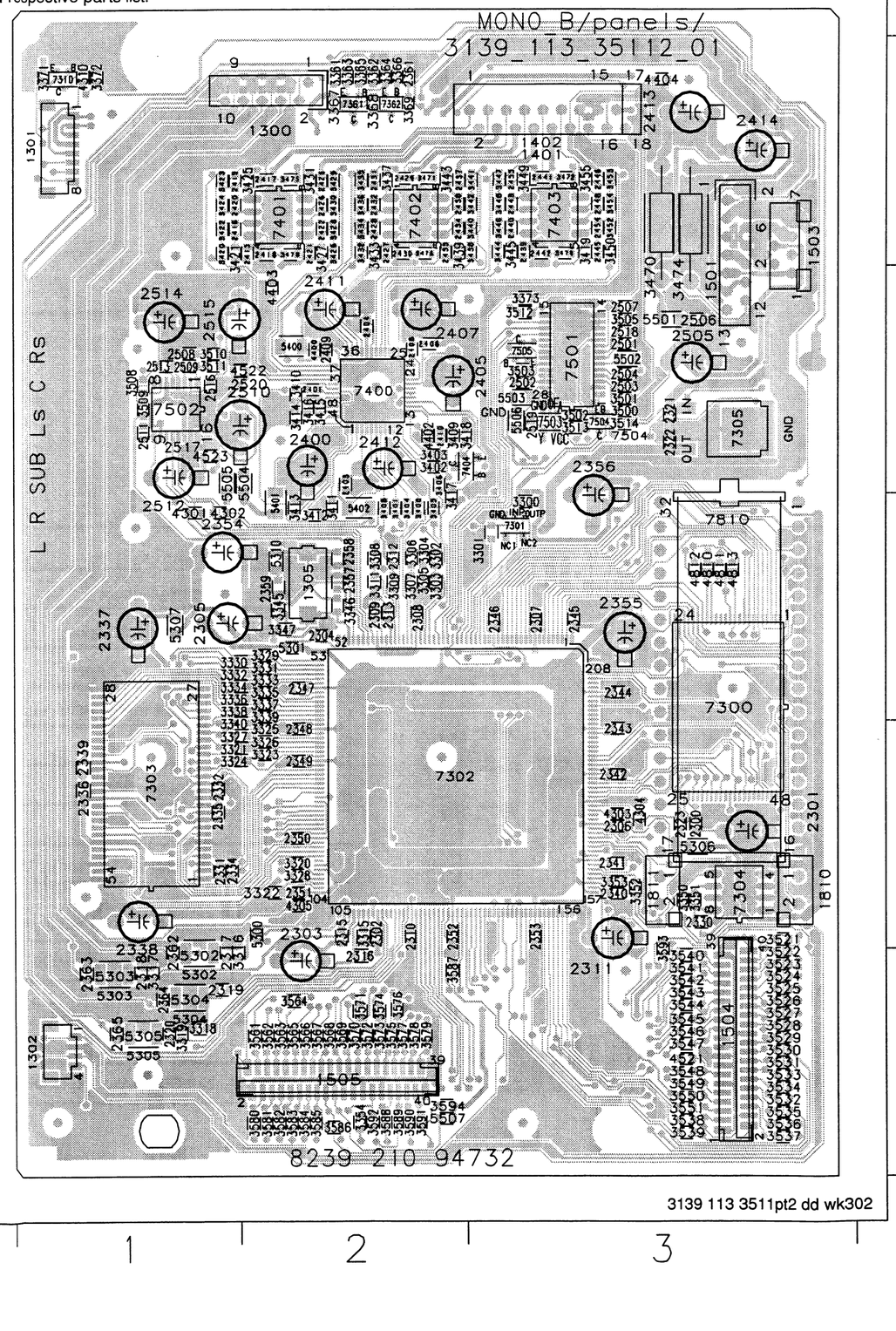

A16 BYTE VSS DQ15A-1 DQ7 DQ14 DQ6 DQ13 DQ5 DQ12 DQ4 VCC DQ11 DQ3 DQ10 DQ2 DQ9 DQ1 DQ8 DQ0 G VSS E A0
48 37 36 25
M29F800DT
M29F800DB
12 13 24
A15 A14 A13 A12 A11 A10 A9 A8 NC NC W RP NC NC RB A18 A17 A7 A6 A5 A4 A3 A2 A1

Table 1. Signal Names

A0-A18	Address Inputs
DQ0-DQ7	Data Inputs/Outputs
DQ8-DQ14	Data Inputs/Outputs
DQ15A±1	Data Input/Output or Address Input
$\overline{E}$	Chip Enable
$\overline{G}$	Output Enable
$\overline{W}$	Write Enable
$\overline{RP}$	Reset/Block Temporary Unprotect
$\overline{RB}$	Ready/Busy Output (not available on SO44 package)
$\overline{BYTE}$	Byte/Word Organization Select
V_{CC}	Supply Voltage
V_{SS}	Ground
NC	Not Connected Internally

TOP VIEW - SMD & COMPONENT LAYOUT

This assembly drawing shows a summary of all possible version. For components used in a specific version see schematic and respective parts list.



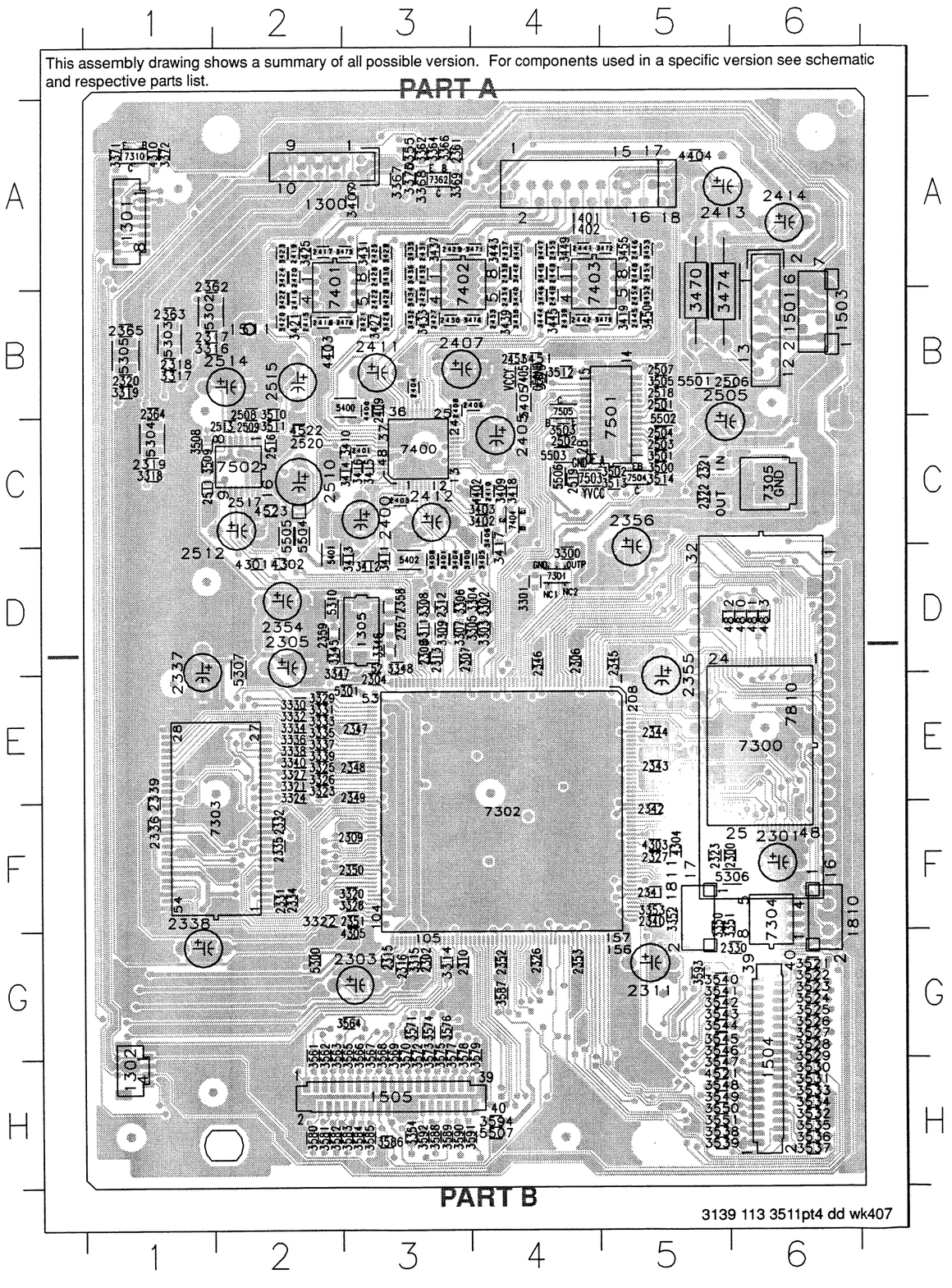
12-2

1300	A2	2411	B2	3329	C2	3448	A3	3582	E2						
1301	A1	2412	B2	3330	C1	3449	A3	3583	E2						
1302	E1	2413	A3	3331	C2	3450	A3	3584	E2						
1305	C2	2414	A3	3332	C1	3452	A3	3585	E2						
1401	A3	2415	A2	3333	C2	3453	A3	3586	E2						
1402	A3	2416	A1	3334	C1	3454	A3	3587	E2						
1501	B3	2417	A2	3335	C2	3455	A3	3588	E2						
1503	A3	2418	A2	3336	C1	3470	B3	3589	E2						
1504	E3	2419	A1	3337	C2	3471	A2	3590	E2						
1505	E2	2420	A1	3338	C1	3472	A3	3591	E2						
1810	D3	2421	A2	3339	C2	3474	B3	3592	E2						
1811	D3	2422	A2	3340	D1	3475	A2	3593	E3						
2300	D3	2425	A2	3345	C2	3476	A2	3594	E2						
2301	D3	2426	A2	3346	C2	3478	A2	4301	C1						
2302	D2	2427	A2	3347	C2	3479	A3	4302	C1						
2303	D2	2428	A2	3350	D3	3500	B3	4303	D3						
2304	C2	2429	A2	3351	D3	3501	B3	4304	D3						
2305	C1	2430	A2	3352	D3	3502	B3	4305	D2						
2306	D3	2431	A2	3353	D3	3503	B3	4310	A1						
2307	C3	2432	A2	3354	E2	3505	B3	4400	B2						
2308	C2	2433	A2	3361	A2	3508	B1	4402	B2						
2309	C2	2434	A2	3362	A2	3509	B1	4403	B2						
2310	D2	2437	A2	3363	A2	3510	B1	4404	A3						
2311	E3	2438	A2	3364	A2	3511	B1	4521	E3						
2312	C2	2439	A3	3365	A2	3512	B3	4522	B2						
2313	C2	2440	A3	3366	A2	3513	B3	4523	B1						
2315	D2	2441	A3	3367	A2	3514	B3	4810	C3						
2316	E2	2442	A3	3368	A2	3521	D3	4811	C3						
2317	E1	2443	A3	3369	A2	3522	E3	4812	C3						
2318	E1	2445	A3	3371	A1	3523	E3	4813	C3						
2319	E1	2446	A3	3372	A1	3524	E3	5300	D2						
2320	E1	2448	A3	3373	B3	3525	E3	5301	C2						
2321	B3	2454	A3	3400	C2	3526	E3	5302	E1						
2322	B3	2455	A3	3401	C2	3527	E3	5303	E1						
2323	D3	2501	B3	3402	B2	3528	E3	5304	E1						
2330	D3	2502	B3	3403	B2	3529	E3	5305	E1						
2331	D1	2503	B3	3404	C2	3530	E3	5306	D3						
2332	D1	2504	B3	3405	C2	3531	E3	5307	C1						
2334	D1	2505	B3	3406	B2	3532	E3	5310	C2						
2335	D1	2506	B3	3408	C2	3533	E3	5400	B2						
2336	D1	2507	B3	3409	B2	3534	E3	5401	C2						
2337	C1	2508	B1	3410	B2	3535	E3	5402	C2						
2338	E1	2509	B1	3411	C2	3536	E3	5501	B3						
2339	D1	2510	B2	3412	C2	3537	E3	5502	B3						
2340	D3	2511	B1	3413	C2	3538	E3	5503	B3						
2341	D3	2512	C1	3414	B2	3539	E3	5504	B2						
2342	D3	2513	B1	3415	B2	3540	E3	5505	B1						
2343	D3	2514	B1	3416	B2	3541	E3	5506	B3						
2344	C3	2515	B1	3417	C2	3542	E3	5507	E2						
2345	C3	2516	B1	3418	B2	3543	E3	7300	C3						
2346	C3	2517	B1	3419	A3	3544	E3	7301	C3						
2347	C2	2518	B3	3420	A1	3545	E3	7302	C2						
2348	D2	2519	B3	3421	A1	3546	E3	7303	C1						
2349	D2	2520	B2	3422	A1	3547	E3	7304	D3						
2350	D2	3300	C3	3423	A1	3548	E3	7305	B3						
2351	D2	3301	C3	3424	A1	3549	E3	7310	A1						
2352	D2	3302	C2	3425	A2	3550	E3	7361	A2						
2353	D3	3303	C2	3426	A2	3551	E3	7362	A2						
2354	C1	3304	C2	3427	A2	3561	E2	7400	B2						
2355	C3	3305	C2	3428	A2	3562	E2	7401	A2						
2356	B3	3306	C2	3429	A2	3563	E2	7402	B2						
2357	C2	3307	C2	3430	A2	3564	E2	7403	B3						
2358	C2	3308	C2	3431	A2	3565	E2	7404	B3						
2359	C2	3309	C2	3432	A2	3566	E2	7501	B3						
2361	A2	3311	C2	3433	A2	3567	E2	7502	B1						
2362	E1	3315	D2	3434	A2	3568	E2	7503	B3						
2363	E1	3316	E1	3435	A2	3569	E2	7504	B3						
2364	E1	3317	E1	3436	A2	3570	E2	7505	B3						
2365	E1	3318	E1	3437	A2	3571	E2	7810	C3						
2400	B2	3319	E1	3438	A3	3572	E2								
2401	B2	3320	D2	3439	A2	3573	E2								
2403	B2	3321	D1	3440	A3	3574	E2								
2404	B2	3322	D2	3441	A3	3575	E2								
2405	B3	3323	D2	3442	A3	3576	E2								
2406	B2	3324	D1	3443	A2	3577	E2								
2407	B2	3325	D2	3444	A3	3578	E2								
2408	B2	3326	D2	3445	A3	3579	E2								
2409	B2	3327	D1	3446	A3	3580	E2								
2410	B2	3328	D2	3447	A3	3581	E2								

12-2a

TOP VIEW - SMD & COMPONENT LAYOUT (pc board ... 3511p4)

This assembly drawing shows a summary of all possible version. For components used in a specific version see schematic and respective parts list.



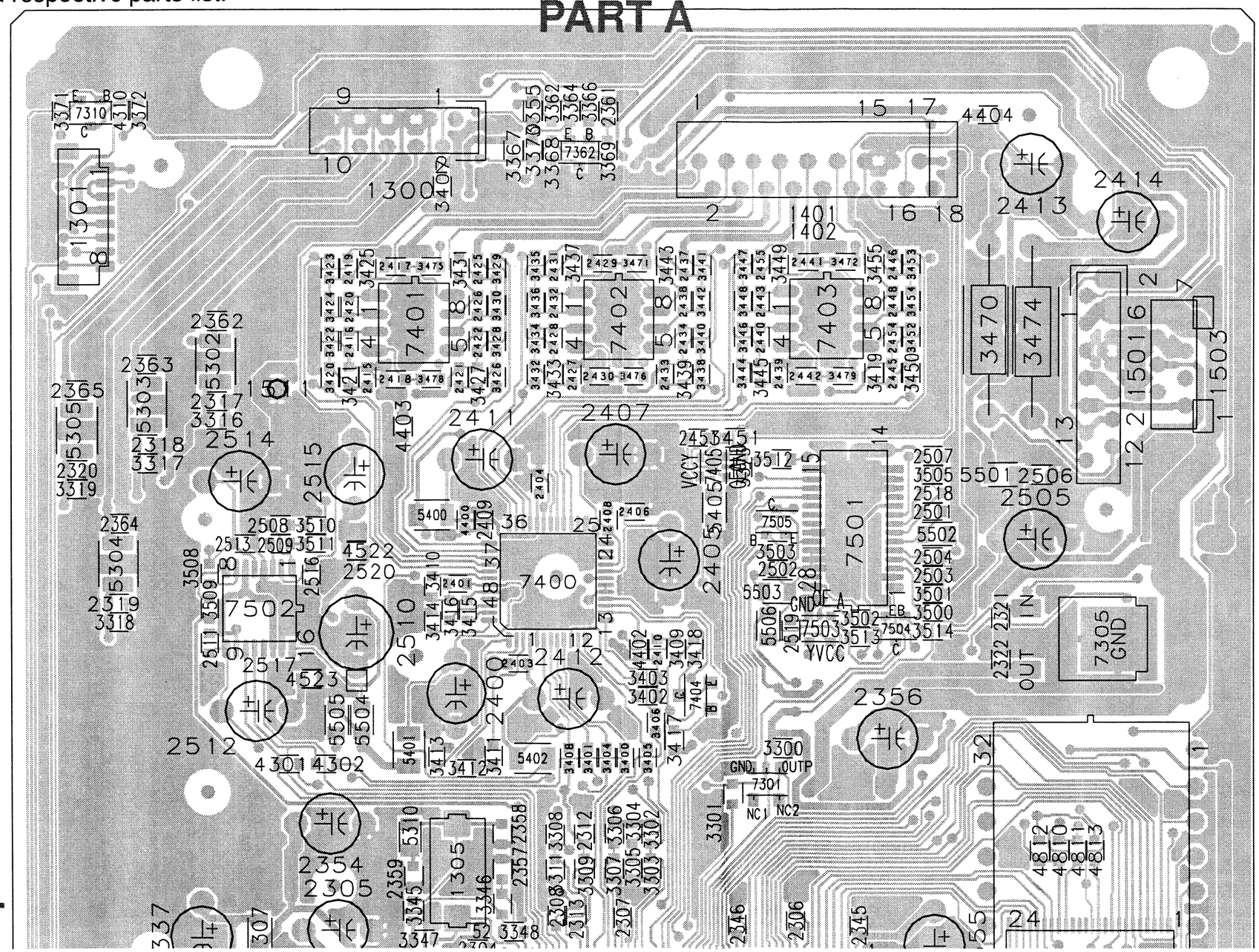
1300	A2	2408	B3	3324	E2	3442	A4	3575	G3
1301	A1	2409	B3	3325	E2	3443	A4	3576	G3
1302	H1	2410	C4	3326	E2	3444	B4	3577	G3
1305	D3	2411	B3	3327	E2	3445	B4	3578	G3
1401	A4	2412	C3	3328	F3	3446	B4	3579	G4
1402	A4	2413	A5	3329	E2	3447	A4	3580	H2
1501	B6	2414	A6	3330	E2	3448	A4	3581	H2
1503	B6	2415	B2	3331	E2	3449	A4	3582	H2
1504	H6	2416	B2	3332	E2	3450	B5	3583	H3
1505	H3	2417	A2	3333	E2	3451	B4	3584	H3
1511	B2	2418	B2	3334	E2	3452	B5	3585	H3
1810	F6	2419	A2	3335	E2	3453	A5	3586	H3
1811	F5	2420	A2	3336	E2	3454	A5	3587	G4
2300	F5	2421	B3	3337	E2	3455	A5	3588	H3
2301	F6	2422	B3	3338	E2	3470	B5	3589	H3
2302	G3	2425	A3	3339	E2	3471	A4	3590	H3
2303	G3	2426	A3	3340	E2	3472	A5	3591	H3
2304	E3	2427	B3	3345	D2	3474	B5	3592	H3
2305	D2	2428	B3	3346	D3	3475	A3	3593	G5
2306	D4	2429	A3	3347	D2	3476	B4	3594	H4
2307	D3	2430	B3	3348	D3	3478	B3	4301	D2
2308	D3	2431	A3	3350	F5	3479	B5	4302	D2
2309	F3	2432	A3	3351	F5	3500	C5	4303	F5
2310	G3	2433	B4	3352	F5	3501	C5	4304	F5
2311	G5	2434	B4	3353	F5	3502	C5	4305	G3
2312	D3	2437	A4	3354	H3	3503	C4	4310	A1
2313	D3	2438	A4	3355	A3	3505	B5	4400	B3
2315	G3	2439	B4	3362	A3	3508	C1	4402	C4
2316	G3	2440	B4	3364	A3	3509	C1	4403	B2
2317	B1	2441	A4	3366	A3	3510	B2	4404	A5
2318	B1	2442	B4	3367	A3	3511	C2	4521	H5
2319	C1	2443	A4	3368	A3	3512	B4	4522	C2
2320	B1	2445	B5	3369	A3	3513	C5	4523	C2
2321	C5	2446	A5	3370	A3	3514	C5	4810	D6
2322	C5	2448	A5	3371	A1	3521	G6	4811	D6
2323	F5	2451	B4	3372	A1	3522	G6	4812	D5
2326	G4	2454	B5	3373	B4	3523	G6	4813	D6
2327	F5	2455	A4	3400	D3	3524	G6	5300	G2
2330	G6	2501	B5	3401	D3	3525	G6	5301	E3
2331	F2	2502	C4	3402	C4	3526	G6	5302	B1
2332	F2	2503	C5	3403	C4	3527	G6	5303	B1
2334	F2	2504	C5	3404	D3	3528	G6	5304	C1
2335	F2	2505	B5	3405	D4	3529	G6	5305	B1
2336	F1	2506	B6	3406	C4	3530	H6	5306	F6
2337	D1	2507	B5	3407	A3	3531	H6	5307	D2
2338	F1	2508	B2	3408	D3	3532	H6	5310	D2
2339	F1	2509	C2	3409	C4	3533	H6	5400	B3
2340	F5	2510	C2	3410	C3	3534	H6	5401	D2
2341	F5	2511	C1	3411	D3	3535	H6	5402	D3
2342	F5	2512	D1	3412	D3	3536	H6	5405	B4
2343	E5	2513	C2	3413	D3	3537	H6	5501	B5
2344	E5	2514	B2	3414	C3	3538	H5	5502	C5
2345	D5	2515	B2	3415	C3	3539	H5	5503	C4
2346	D4	2516	C2	3416	C3	3540	G5	5504	C2
2347	E3	2517	C2	3417	D4	3541	G5	5505	C2
2348	E3	2518	B5	3418	C4	3542	G5	5506	C4
2349	E3	2519	C4	3419	B5	3543	G5	5507	H4
2350	F3	2520	C2	3420	B2	3544	G5	7300	E6
2351	F3	3300	D4	3421	B2	3545	G5	7301	D4
2352	G4	3301	D4	3422	B2	3546	G5	7302	F4
2353	G4	3302	D4	3423	A2	3547	H5	7303	F2
2354	D2	3303	D4	3424	A2	3548	H5	7304	F6
2355	E5	3304	D4	3425	A2	3549	H5	7305	C6
2356	C5	3305	D4	3426	B3	3550	H5	7310	A1
2357	D3	3306	D3	3427	B3	3551	H5	7362	A3
2358	D3	3307	D3	3428	B3	3561	G2	7400	C3
2359	D2	3308	D3	3429	A3	3562	G2	7401	A2
2361	A3	3309	D3	3430	A3	3563	G2	7402	A3
2362	A1	3311	D3	3431	A3	3564	G3	7403	A4
2363	B1	3314	G3	3432	B3	3565	G3	7404	C4
2364	B1	3315	G3	3433	B3	3566	G3	7405	B4
2365	B1	3316	B1	3434	B3	3567	G3	7501	C5
2400	C3	3317	B1	3435	A3	3568	G3	7502	C2
2401	C3	3318	C1	3436	A3	3569	G3	7503	C4
2403	C3	3319	B1	3437	A3	3570	G3	7504	C5
2404	B3	3320	F3	3438	B4	3571	G3	7505	B4
2405	C4	3321	F2	3439	B4	3572	G3	7810	E6
2406	B4	3322	F2	3440	B4	3573	G3		
2407	B3	3323	E2	3441	A4	3574	G3		

12-2b

TOP VIEW - SMD & COMPONENT LAYOUT (pc board ... 3511p4) PART A

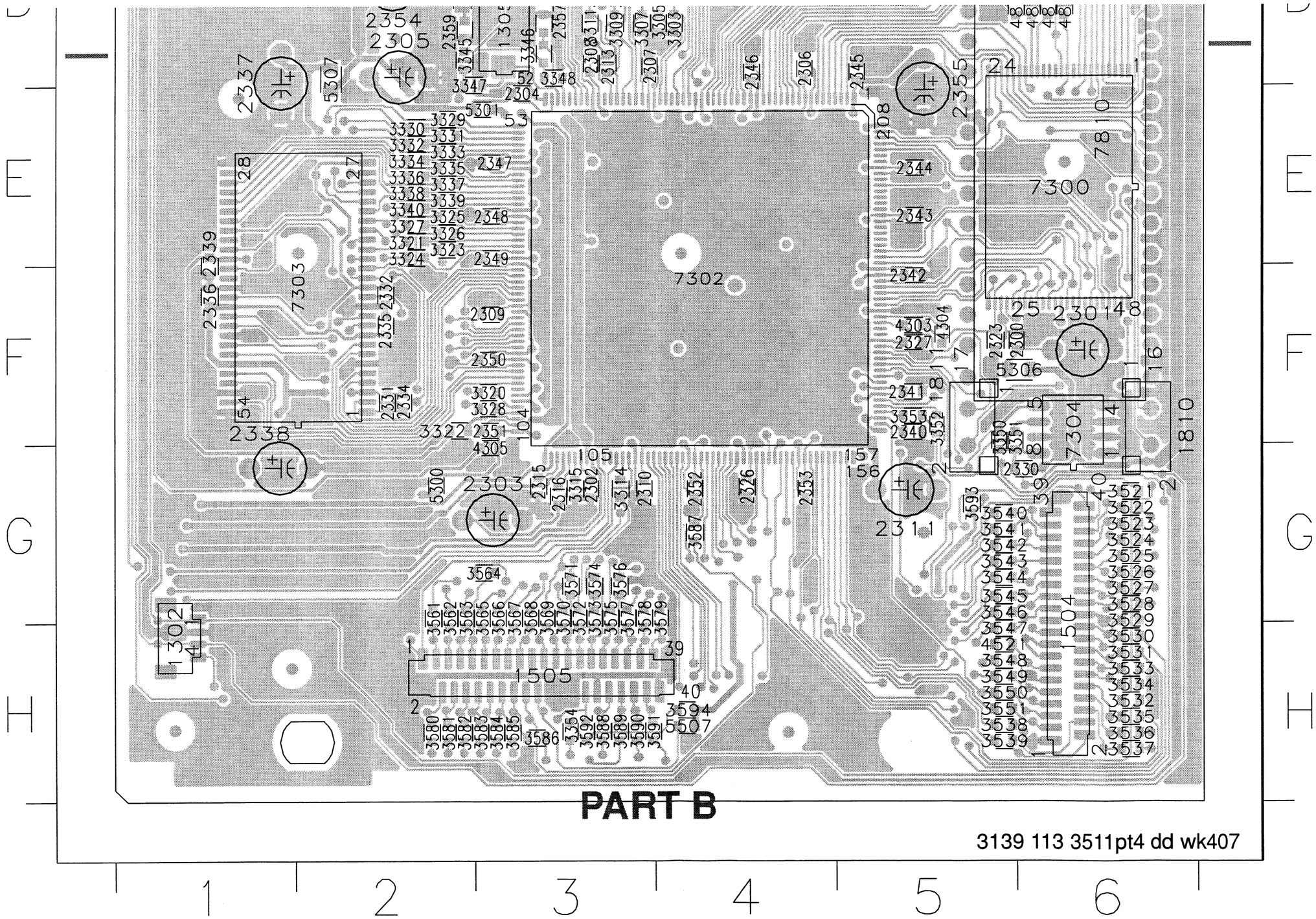
This assembly drawing shows a summary of all possible version. For components used in a specific version see schematic and respective parts list.

PART A



12-2c

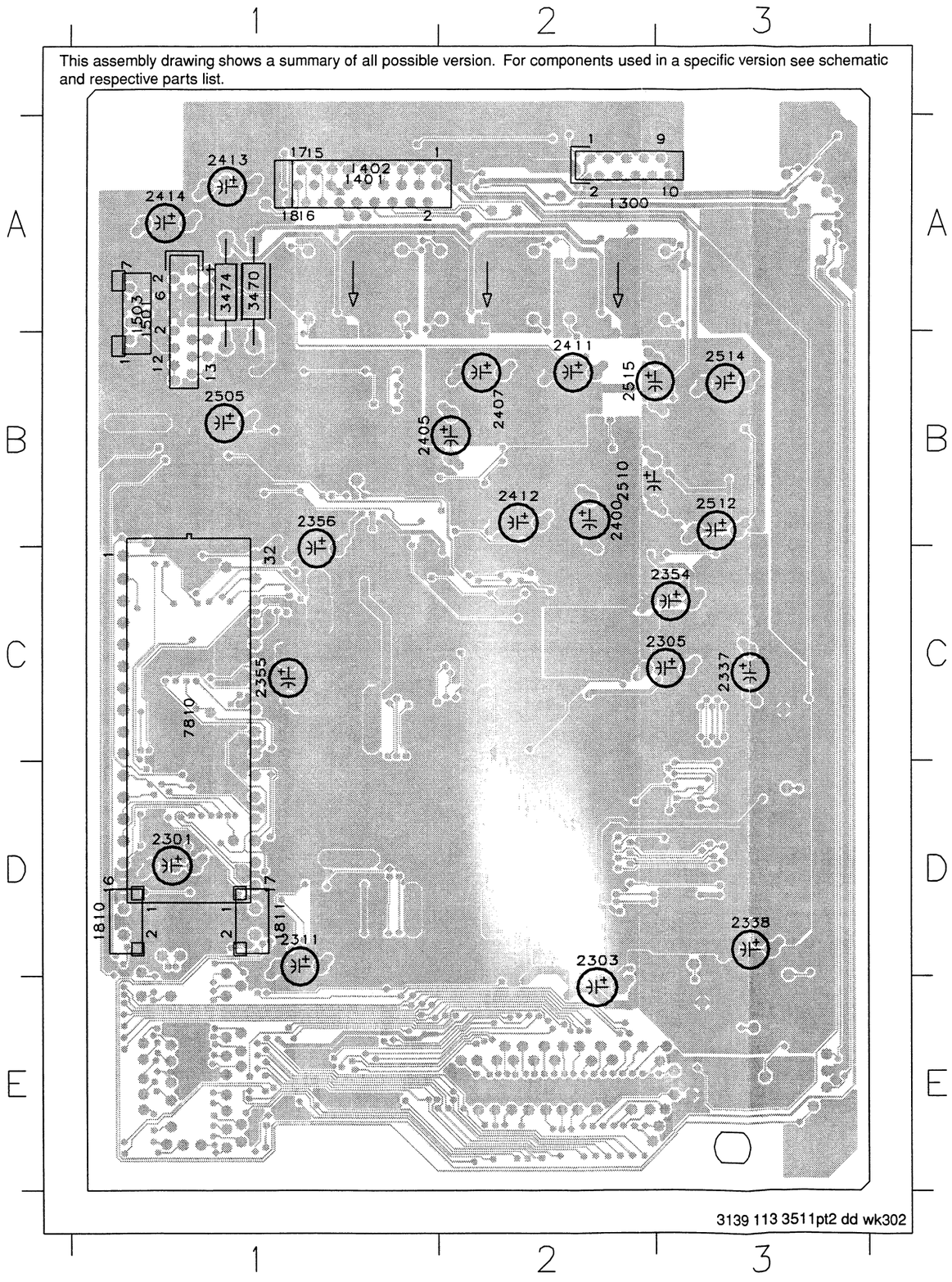
TOP VIEW - SMD & COMPONENT LAYOUT (pc board ... 3511p4) PART B



12-3

BOTTOM VIEW - COMPONENT LAYOUT

This assembly drawing shows a summary of all possible version. For components used in a specific version see schematic and respective parts list.



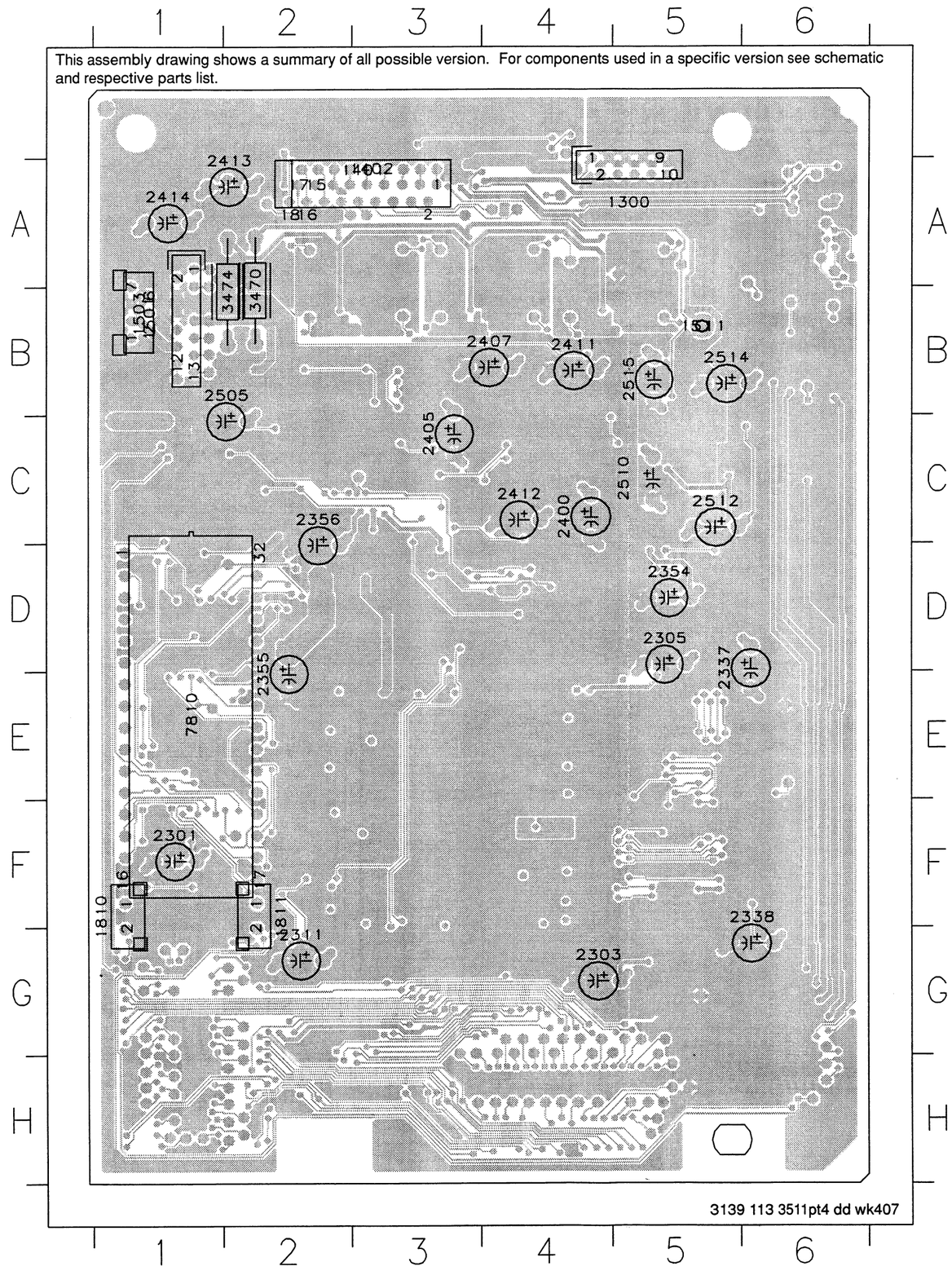
3139 113 3511pt2 dd wk302

1300	A2
1401	A1
1402	A1
1501	A1
1503	A1
1810	D1
1811	D1
2301	D1
2303	D2
2305	C3
2311	D1
2337	C3
2338	D3
2354	C3
2355	C1
2356	B1
2400	B2
2405	B1
2407	B2
2411	B2
2412	B2
2413	A1
2414	A1
2505	B1
2510	B2
2512	B3
2514	B3
2515	B2
3470	A1
3474	A1
7810	C1

12-3a

BOTTOM VIEW - COMPONENT LAYOUT (pc board ... 3511p4)

This assembly drawing shows a summary of all possible version. For components used in a specific version see schematic and respective parts list.



1300	A5
1401	A3
1402	A3
1501	B1
1503	B1
1511	B5
1810	F1
1811	F2
2301	F1
2303	G4
2305	D5
2311	G2
2337	D5
2338	F6
2354	D5
2355	E2
2356	C2
2400	C4
2405	C3
2407	B4
2411	B4
2412	C4
2413	A2
2414	A1
2505	B2
2510	C5
2512	C5
2514	B5
2515	B5
3470	B2
3474	B2
7810	E1

12-4

CIRCUIT DIAGRAM 1

1300 C14 1811 I2 2304 B5 2309 B8 2315 D9 2320 D11 2331 H11 2337 H11 2342 A5 2347 A6 2352 A8 2357 I8 2363 D13 3302 B9 3307 B11 3316 D10 3321 E9 3326 E9 3331 E9 3336 F9 3345 H9 3352 H9 3363 B13 3368 B14 4301 A12 4310 I10 5300 A6 5305 D12 7301 A3 7361 A14
1301 I10 2300 B2 2305 B5 2310 B8 2316 D9 2321 A9 2332 A8 2338 H11 2343 A5 2348 A7 2353 A8 2358 I9 2364 D12 3303 B10 3308 B11 3317 D10 3322 E9 3327 E9 3332 F9 3337 F9 3346 H9 3353 G9 3364 C13 3369 B14 4302 A12 4810 I1 5301 A6 5306 B2 7302 E7 7362 C14
1302 I14 2301 B2 2306 A8 2311 B8 2317 D10 2322 A10 2333 H11 2339 E14 2344 A5 2349 A7 2354 A8 2359 I9 2365 D12 3304 B10 3309 B9 3318 D10 3323 E9 3328 E9 3333 F9 3338 F9 3347 I8 3354 H9 3365 A13 3371 I5 4303 C4 4811 I1 5302 D12 5307 F11 7304 I12 7810 F1
1305 I9 2302 A5 2307 A8 2312 B9 2318 D10 2323 E3 2334 H11 2340 A4 2345 A6 2350 A7 2355 A9 2360 C14 3300 A4 3305 B10 3310 B11 3319 D11 3324 E9 3329 E9 3334 F9 3339 F9 3348 I8 3355 I11 3366 C13 3372 I5 4304 C4 4812 I1 5303 D12 5308 A12 7310 B2
1810 I1 2303 A5 2308 A8 2313 B9 2319 D11 2330 I12 2335 H11 2341 A5 2346 A6 2351 A7 2356 A9 2361 C14 3301 B5 3306 B10 3311 B11 3320 D9 3325 E9 3335 F9 3340 F9 3351 I11 3362 B13 3367 A14 3373 C11 4305 A11 4813 H2 5304 D12 7300 B2 7310 I5

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

1 DVD PROCESSOR

PSCAN	:	USE	3303/5/7
NON PSCAN	:	USE	3302/4/6

7302
ES6018F (NON P-SCAN)
OR ES6028F (P-SCAN)

For Scart version only

6V if upm selected and widescreen not used. 12V otherwise.

• PROVISION
& KARAOKE ONLY
# LAB USE ONLY ONLY
@ For PCMCIA version only

To 5DTC Control

To AV Board

To Front Display

A B C D E F G H I

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

12-4a

CIRCUIT DIAGRAM 1 (For pc board ... 3511p4)

1 DVD PROCESSOR

PSCAN : USE 3303/5
NON PSCAN : USE 3302/4/6

For 'PM' version only
6V if upm selected and widescreen mat'l used. 12V otherwise.

ES 6018 (NON P-SCAN)
OR ES 6028 (P-SCAN)

* PROVISION
& KARAOKE ONLY
@ MEDIA SLOT ONLY
# LAB USE ONLY ONLY
⁒ 4M ROM

TO AV BOARD
TO FRONT DISPLAY
To 5DTC Control

1300 C14 5307 G10
1301 I10 5310 I9
1302 J14 7300 C2
1305 I8 7301 B3
1810 J1 7302 F6
1811 J1 7304 I11
2300 B1 7305 A9
2301 C1 7310 J5
2302 B4 7362 C13
2303 B4 7810 G1
2304 B4
2305 B4
2306 A8
2307 B8
2308 B8
2309 B8
2310 B8
2311 B8
2312 B8
2313 B9
2315 D9
2316 D9
2317 D9
2318 D10
2319 D10
2320 D11
2321 A9
2322 A10
2323 E3
2326 B8
2327 B8
2330 I12
2331 H10
2332 I10
2334 H10
2335 I11
2336 H11
2337 I11
2338 H11
2339 F13
2340 A4
2341 A4
2342 A4
2343 A5
2344 A5
2345 A5
2346 A5
2347 A6
2348 A6
2349 A5
2350 A7
2351 A7
2352 A7
2353 A7
2354 A8
2355 A8
2356 A8
2357 I9
2358 I8
2359 I9
2361 C14
2362 D12
2363 D12
2364 D12
2365 D12
3300 B3
3301 B5
3302 B9
3303 B9
3304 B9
3305 B10
3306 B10
3307 B10
3308 B10
3309 C8
3311 B10
3314 D8
3315 D9
3316 D9
3317 D10
3318 D10
3319 D11
3320 E8
3321 E9
3322 F8
3323 E8
3324 E9
3325 E8
3326 E9
3327 E8
3328 F9
3329 F8
3330 F9
3331 F8
3332 F9
3333 F8
3334 F9
3335 F8
3336 F9
3337 F8
3338 G9
3339 G8
3340 G9
3345 I9
3346 I8
3347 I8
3348 I8
3350 I10
3351 I11
3352 H8
3353 H9
3354 H8
3355 I8
3362 B12
3364 C12
3366 B13
3367 B14
3368 B13
3369 B14
3370 B13
3371 J4
3372 J5
3373 D11
4301 A11
4302 B11
4303 C4
4304 C4
4305 B11
4310 J9
4810 J1
4811 J1
4812 J1
4813 I2
5300 B5
5301 B5
5302 D11
5303 D11
5304 E11
5305 E11
5306 B1

12-5

CIRCUIT DIAGRAM 2

1401 G13	2405 G7	2411 I2	2417 A11	2425 C9	2431 D9	2439 G9	2446 H9	3402 E2	3409 F2	3415 G2	3421 A9	3427 B9	3433 D9	3439 E9	3445 G9	3452 H10	3472 I4	4400 H5	5402 I2	7403-B H11
1402 F14	2406 G7	2412 I2	2418 A11	2426 C11	2432 D11	2440 G10	2448 H11	3403 E2	3410 F2	3416 G2	3422 A10	3428 B10	3434 D10	3440 E10	3446 F10	3453 I9	3474 I6	4402 F2	7401-A A11	7404 D2
2400 D2	2407 G7	2413 I4	2419 B9	2427 D9	2433 E9	2441 F11	2454 H10	3404 E2	3411 G2	3417 E2	3423 B9	3429 C9	3435 E9	3441 F9	3447 G9	3454 H10	3475 H4	4403 H2	7401-B B11	
2401 D3	2408 G7	2414 I6	2420 A11	2428 D10	2434 E10	2442 G11	2455 G9	3405 E2	3412 G2	3418 D3	3424 A10	3430 C10	3436 D10	3442 F10	3448 G10	3455 I10	3476 I7	4404 H2	7402-A D11	
2403 D4	2409 H5	2415 A9	2421 B9	2429 C11	2437 F9	2443 G11	3400 E2	3406 F2	3413 G2	3419 H9	3425 B10	3431 C10	3437 E10	3443 F10	3449 G10	3470 I4	3478 H7	5400 H2	7402-B E11	
2404 D5	2410 F3	2416 A10	2422 B10	2430 D11	2438 F11	2445 H9	3401 E2	3408 F2	3414 G2	3420 A9	3426 B9	3432 D9	3438 E9	3444 F9	3450 H9	3471 I4	3479 I7	5401 D2	7403-A F11	

1 2 3 4 5 6 7 8 9 10 11 12 13 14

2 DIGITAL TO ANALOG

DC @ INPUT OF op-amp : 1V5
DC @ OUTPUTS OF op-amp : 0V
Measured wrt L_GND

* PROVISION
*NB CS4362 is used in AV2003

PIN 27-30 } 2V4
PIN 33-39 }

+5V_D +5V_DAC
+3V3
DAC_RST
7404
BC847B
3417 4K7
5401 33u
2400 1u0
2401 100n
3418 27K
2403 100n
2404 100n
4V8
7400 CS4382 *NB
VD VA
RST_
VLS
SCLK1
LRCK1|DSD
SCLK2
LRCK2
SDIN1
SDIN2
SDIN3
SDIN4
MCLK
SERIAL PORT
VOLUME CONTROL
MIXER
INTERPOL FILTER
DAC
ANAL FILTER
AOUTA1+ AOUTA1-
AOUTB1+ AOUTB1-
AOUTA2+ AOUTA2-
AOUTB2+ AOUTB2-
AOUTA3+ AOUTA3-
AOUTB3+ AOUTB3-
AOUTA4+ AOUTA4-
AOUTB4+ AOUTB4-
MUTE CONTROL
MUTEC1 MUTEC234
VQ
FILT+
2V4
TBCLK
TWS
TSD0
TSD1
TSD2
MCLK
3400 47R
3401 47R
3402 10K
3403 10K
3404 47R
3405 47R
3406 47R
3407 47R
3408 47R
1/2
+5V_D
3409 47R
2410 100n
I2C_CLK_AD
I2C_DATA_AD
3410 10K
M3|DSD-SCLK
M2|SCL|CCLK
M1|SDA|CDIN
M0|AD0|CS
VLC
CONTROL PORT/ MODE SELECT
3411 10K
3412 10K
3413 10K
3414 10K
3415 10K
3416 10K
DSDA1
DSDB1
DSDA2
DSDB2
DSDA3
DSDB3
DSDA4
DSDB4
DIRECT STREAM DIGITAL INPUT
47u 2405 2406 100n
1u0 2407 2408 100n
GND
4403 L_GND
4404 Rs_GND GND_BUF
4400
2409 100n
+5V +5V_DAC
5400 33u
2411 47u
+5V +5V_D
5402 33u
2412 47u
+5V_v
3470 4R7
2413 47u
GND_BUF
3475 10R +5VA_A
3471 10R +5VA_B
3472 10R +5VA_C
-5V_v
3474 4R7
2414 47u
GND_BUF
3478 10R -5VA_A
3476 10R -5VA_B
3479 10R -5VA_C
4V8

+5VA_A
3420 10K
2415 560p
3421 15K
3422 12K
2416 100p
2417 100n
2418 100n
7401-A LM833D
-5VA_A
2420 100p
3423 10K
2419 560p
3424 12K
3425 15K
L_GND
3426 10K
2421 560p
3427 15K
3428 12K
2422 100p
7401-B LM833D
2425 560p
3430 12K
3429 10K
3431 15K
2426 100p
+5VA_B
3432 10K
2427 560p
3433 15K
3434 12K
2428 100p
2429 100n
2430 100n
7402-A LM833D
-5VA_B
2432 100p
3435 10K
2431 560p
3436 12K
3437 15K
Lfe_GND
3438 10K
2433 560p
3439 15K
3440 12K
2434 100p
7402-B LM833D
2437 560p
3442 12K
3441 10K
3443 15K
2438 100p
+5VA_C
3444 10K
2439 560p
3445 15K
3446 12K
2440 100p
2441 100n
2442 100n
7403-A LM833D
-5VA_C
2443 100p
3447 10K
2455 560p
3448 12K
3449 15K
C_GND
3450 10K
2445 560p
3419 15K
3452 12K
2454 100p
7403-B LM833D
2446 560p
3454 12K
3453 10K
3455 15K
2448 100p
Rs_GND

1 L_GND
2 DVD_R
3 R_GND
4 DVD_Lfe
5 Lfe_GND
6 DVD_Ls
7 Ls_GND
8 DVD_C
9 C_GND
10 DVD_Rs
11 Rs_GND
12 D
13
14 DIG_OUT
15 DIG_IN_1
16 DIG_IN_2
17 MIC_GND
18 MIC_IN
*1401 FMN
1402 FMN-STK
To AV Board

* PROVISION

A B C D E F G H I

12-5a

CIRCUIT DIAGRAM 2 (For pc board ... 3511p4)

2 DIGITAL TO ANALOG

DC @ INPUT OF op-amp : 1V5
DC @ OUTPUTS OF op-amp : 0V
Measured wrt L_GND

PIN 27-30 2V4
PIN 33-39 2V4

PMK version only
TO AV BOARD

TO AV BOARD

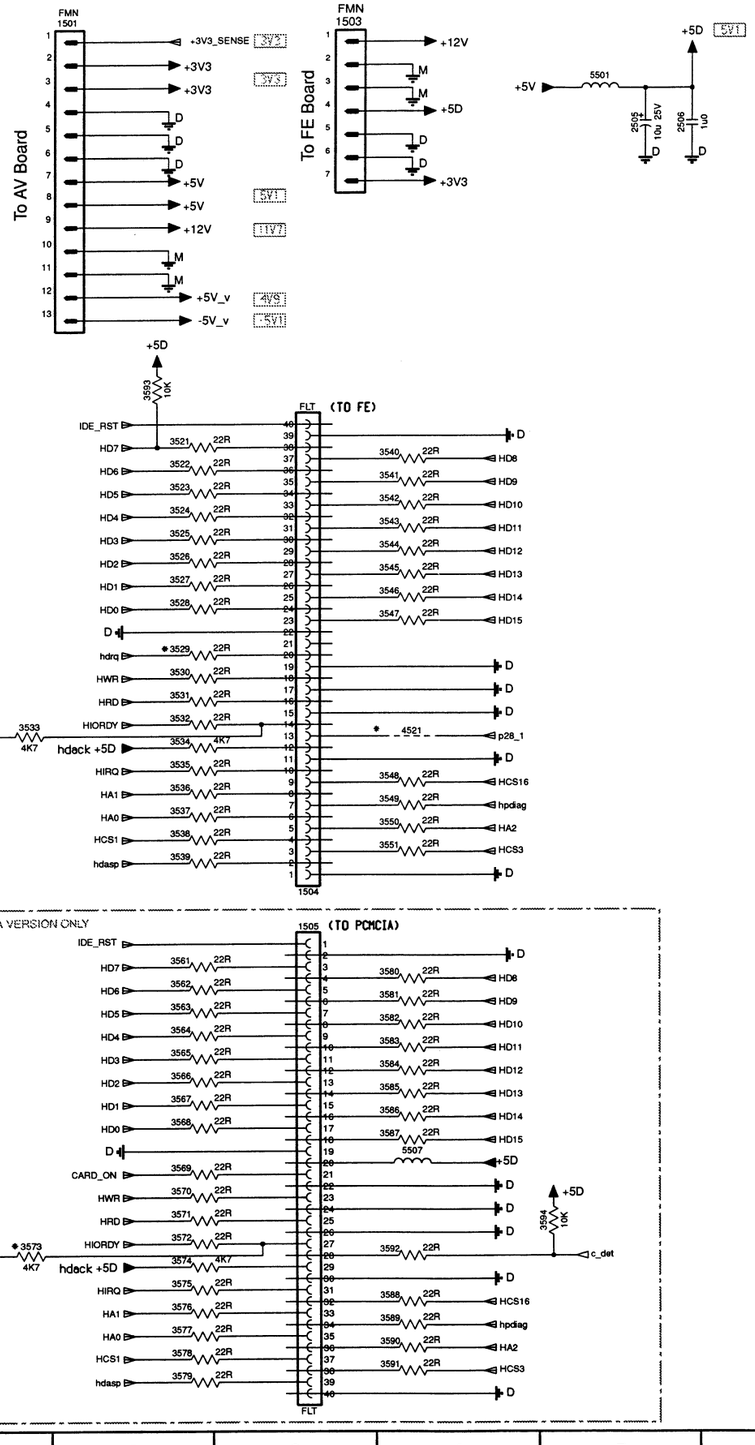
* PROVISION

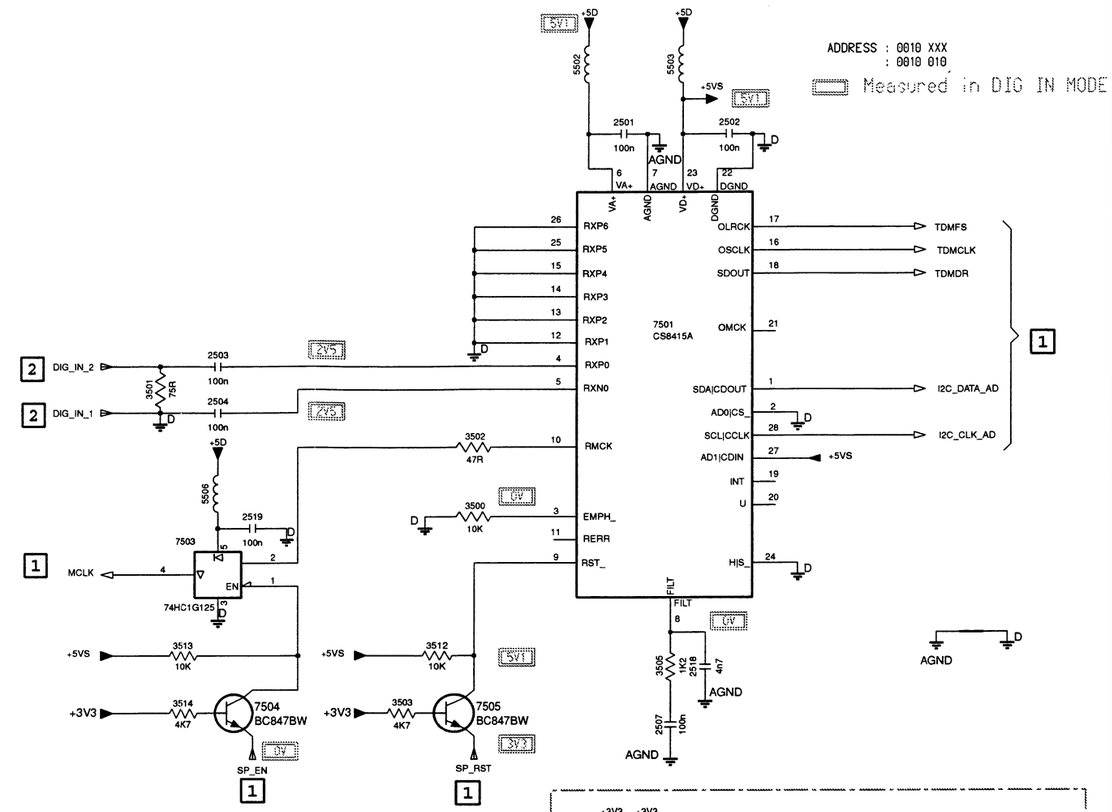
1401 G13
1402 F14
2400 D2
2401 D3
2403 D4
2404 D5
2405 G6
2406 G7
2407 G7
2408 G7
2409 H5
2410 F3
2411 I2
2412 I2
2413 I4
2414 I6
2415 A9
2416 A10
2417 A11
2418 A11
2419 B9
2420 A11
2421 B9
2422 B10
2425 C9
2426 C11
2427 D9
2428 D10
2429 C11
2430 D11
2431 D9
2432 D11
2433 E9
2434 E10
2437 F9
2438 F11
2439 G9
2440 G10
2441 F11
2442 G11
2443 G11
2445 H9
2446 H9
2448 H11
2451 H13
2454 H10
2455 G9
3400 E2
3401 E2
3402 E2
3403 E2
3404 E2
3405 E2
3406 E2
3407 F7
3408 F2
3409 F2
3410 F2
3411 G2
3412 G2
3413 G2
3414 G2
3415 G2
3416 G2
3417 E2
3418 D3
3419 H9
3420 A9
3421 A9
3422 A10
3423 B9
3424 A10
3425 B10
3426 B9
3427 B9
3428 B10
3429 C9
3430 C10
3431 C10
3432 D9
3433 D9
3434 D10
3435 E9
3436 D10
3437 E10
3438 E9
3439 E9
3440 E10
3441 F9
3442 F10
3443 F10
3444 F9
3445 G9
3446 F10
3447 G9
3448 G10
3449 G10
3450 H9
3451 I13
3452 H10
3453 I9
3454 H10
3455 I10
3470 I3
3471 I4
3472 I4
3474 I6
3475 H4
3476 I7
3478 H7
3479 I7
4400 H5
4402 F2
4403 H2
4404 H2
5400 H2
5401 D2
5402 I2
5405 H13
7400 E3
7401-A A11
7401-B B11
7402-A D11
7402-B E11
7403-A F11
7403-B H11
7404 D2
7405 I13

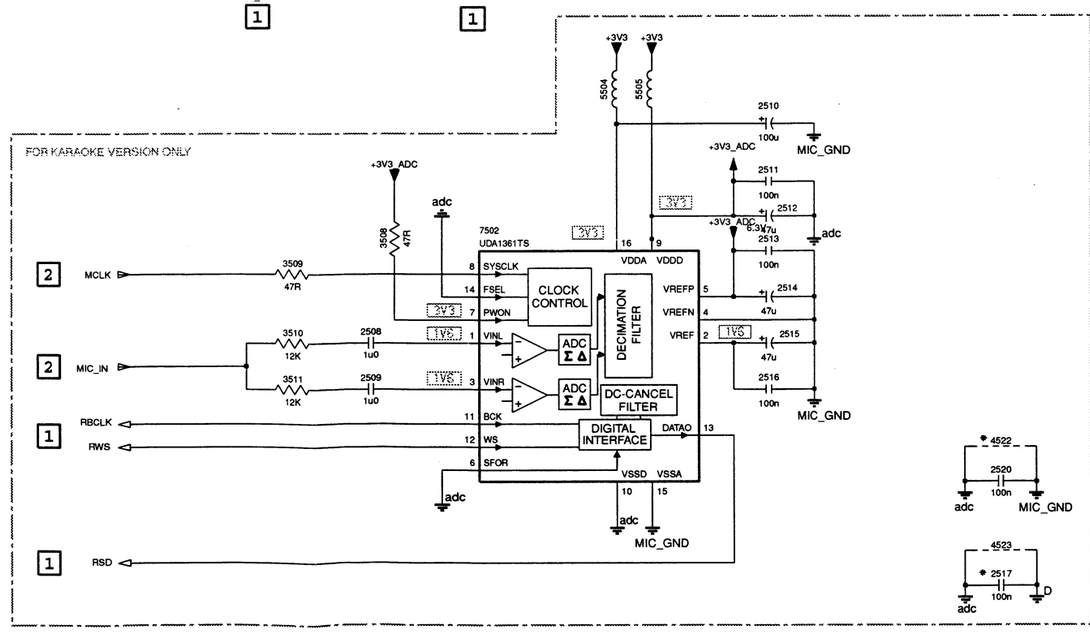
12-6

CIRCUIT DIAGRAM 3

3 SPDIF CONVERTER & ADC







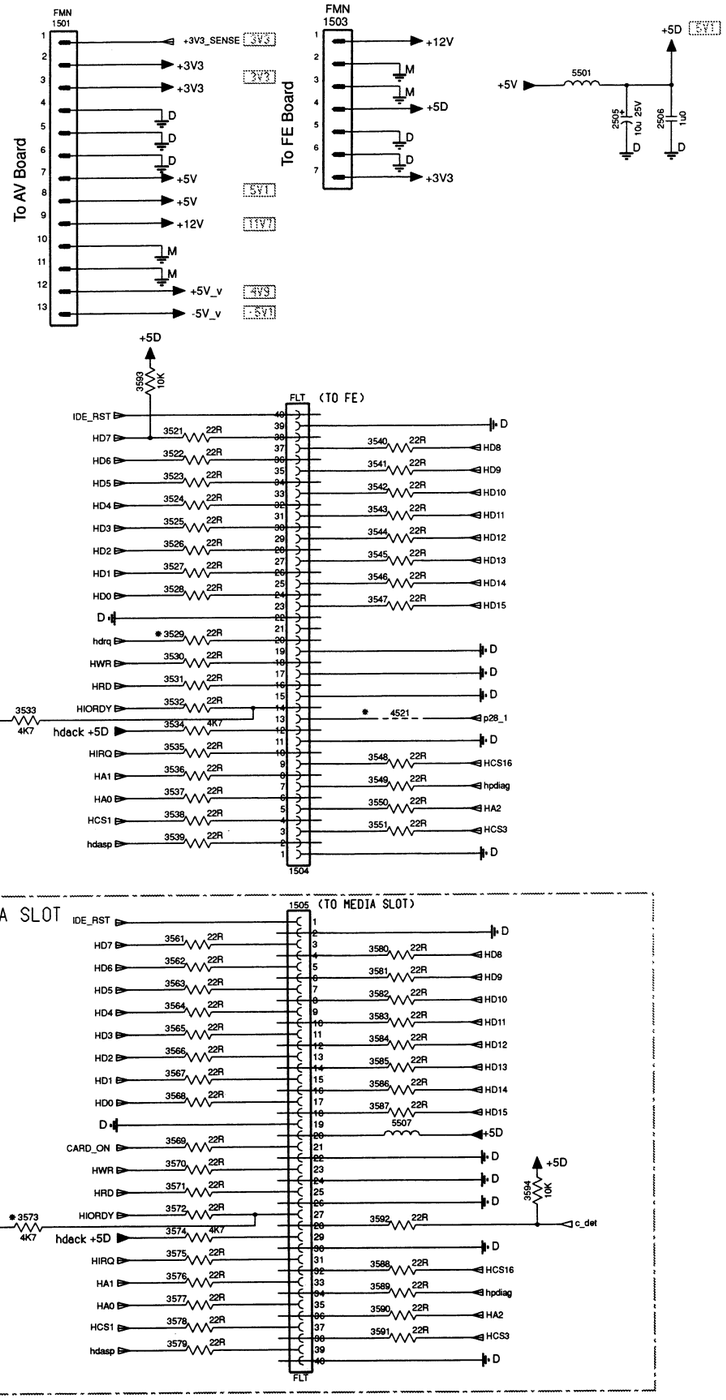
* PROVISION

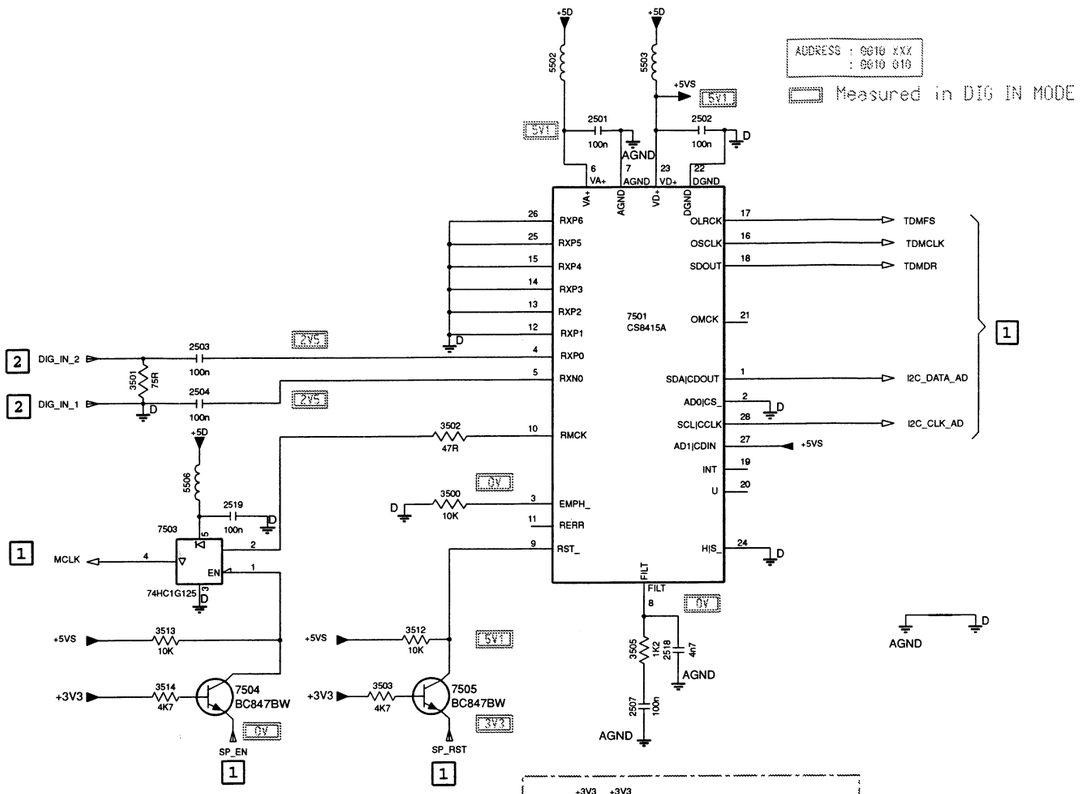
1501 A2
1503 A3
1504 F3
1505 G3
2501 A10
2502 A10
2503 C7
2504 C7
2505 B5
2506 B5
2507 E10
2508 G8
2509 H8
2510 F11
2511 F11
2512 G11
2513 G11
2514 G11
2515 G11
2516 H11
2517 I12
2518 E10
2519 D8
2520 H12
3500 D9
3501 C7
3502 C9
3503 E8
3505 E10
3508 G8
3509 G8
3510 G8
3511 H8
3512 E9
3513 E7
3514 E7
3521 D2
3522 D2
3523 D2
3524 D2
3525 D2
3526 D2
3527 D2
3528 E2
3529 E2
3530 E2
3531 E2
3532 E2
3533 E1
3534 E2
3535 F2
3536 F2
3537 F2
3538 F2
3539 F2
3540 D4
3541 D4
3542 D4
3543 D4
3544 D4
3545 D4
3546 E4
3547 E4
3548 F4
3549 F4
3550 F4
3551 F4
3561 G2
3562 G2
3563 G2
3564 G2
3565 G2
3566 H2
3567 H2
3568 H2
3569 H2
3570 H2
3571 H2
3572 I2
3573 I1
3574 I2
3575 I2
3576 I2
3577 I2
3578 I2
3579 I2
3580 G4
3581 G4
3582 G4
3583 G4
3584 G4
3585 H4
3586 H4
3587 H4
3588 I4
3589 I4
3590 I4
3591 I4
3592 I4
3593 C2
3594 H5
4521 E4
4522 H12
4523 I12
5501 A5
5502 A10
5503 A10
5504 F10
5505 F10
5506 D7
5507 H4
7501 C10
7502 G9
7503 D7
7504 E8
7505 E9

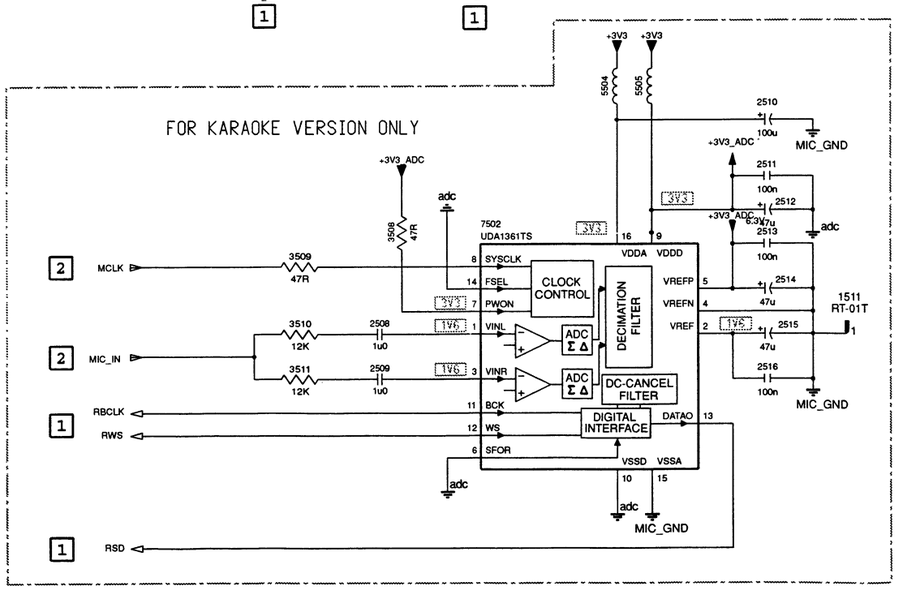
12-6a

CIRCUIT DIAGRAM 3 (For pc board ...3511p4)

SPDIF CONVERTER & ADC







* PROVISION

1501 A1 7503 D7
1503 A3 7504 E7
1504 F3 7505 E9
1505 G3
1511 G11
2501 A10
2502 A10
2503 C7
2504 C7
2505 B5
2506 B5
2507 E10
2508 G8
2509 H8
2510 F11
2511 F11
2512 G11
2513 G11
2514 G11
2515 G11
2516 H11
2517 I12
2518 E10
2519 D7
2520 H12
3500 D9
3501 C7
3502 C9
3503 E8
3505 E10
3508 G8
3509 G8
3510 G8
3511 H8
3512 D9
3513 D7
3514 E7
3521 D2
3522 D2
3523 D2
3524 D2
3525 D2
3526 D2
3527 D2
3528 E2
3529 E2
3530 E2
3531 E2
3532 E2
3533 E1
3534 E2
3535 F2
3536 F2
3537 F2
3538 F2
3539 F2
3540 D4
3541 D4
3542 D4
3543 D4
3544 D4
3545 D4
3546 D4
3547 E4
3548 F4
3549 F4
3550 F4
3551 F4
3561 G2
3562 G2
3563 G2
3564 G2
3565 G2
3566 G2
3567 H2
3568 H2
3569 H2
3570 H2
3571 H2
3572 H2
3573 I1
3574 I2
3575 I2
3576 I2
3577 I2
3578 I2
3579 I2
3580 G4
3581 G4
3582 G4
3583 G4
3584 G4
3585 H4
3586 H4
3587 H4
3588 I4
3589 I4
3590 I4
3591 I4
3592 I4
3593 C2
3594 H4
4521 E4
4522 H12
4523 I12
5501 A5
5502 A9
5503 A10
5504 F10
5505 F10
5506 C7
5507 H4
7501 B10
7502 G9

ELECTRICAL PARTS LIST - MONO-BE BOARD

MISCELLANEOUS

	3139 118 56481	BE (Back End) PCB Assembly CD222
300	2422 025 16587	FFC Socket 10P Vert.
301	2422 025 16988	FFC Socket 8P Vert.
302	2422 025 16792	FFC Socket 4P Vert.
305	2422 543 01137	X'tal Resonator 27MHz 10p
402	4822 267 11028	FFC Socket 16P Hort.
501	2422 025 16591	FFC Socket 13P Vert.
503	2422 025 17367	FFC Socket 7P Vert.
504	2422 025 17763	FFC Socket 40P Vert.

CAPACITORS

2300	2238 586 59812	100nF 50V
2301	4822 124 21732	10uF 20% 25V
2302	2238 586 59812	100nF 50V
2303	4822 124 21732	10uF 20% 25V
2304	2238 586 59812	100nF 50V
2305	4822 124 21732	10uF 20% 25V
2306	2238 586 59812	100nF 50V
2307	2238 586 59812	100nF 50V
2308	2238 586 59812	100nF 50V
2309	2238 586 59812	100nF 50V
2310	2238 586 59812	100nF 50V
2311	4822 124 21732	10uF 20% 25V
2312	4822 122 33752	15pF 5% 50V
2313	4822 122 33761	22pF 5% 50V
2315	2238 586 59812	100nF 50V
2316	2238 586 59812	100nF 50V
2317	2020 552 94427	100pF 5% 50V
2318	2020 552 94427	100pF 5% 50V
2319	2020 552 94427	100pF 5% 50V
2320	2020 552 94427	100pF 5% 50V
2321	3198 017 44740	470nF 10V
2322	3198 017 44740	470nF 10V
2326	2238 586 59812	100nF 50V
2327	2238 586 59812	100nF 50V
2330	2238 586 59812	100nF 50V
2331	2238 586 59812	100nF 50V
2332	2238 586 59812	100nF 50V
2334	2238 586 59812	100nF 50V
2335	2238 586 59812	100nF 50V
2336	2238 586 59812	100nF 50V
2337	4822 124 21732	10uF 20% 25V
2338	4822 124 21732	10uF 20% 25V
2339	4822 122 33752	15pF 5% 50V
2340	2238 586 59812	100nF 50V
2341	2238 586 59812	100nF 50V
2342	2238 586 59812	100nF 50V
2343	2238 586 59812	100nF 50V
2344	2238 586 59812	100nF 50V
2345	2238 586 59812	100nF 50V
2346	2238 586 59812	100nF 50V
2347	2238 586 59812	100nF 50V
2348	2238 586 59812	100nF 50V
2349	2238 586 59812	100nF 50V
2350	2238 586 59812	100nF 50V
2351	2238 586 59812	100nF 50V
2352	2238 586 59812	100nF 50V
2353	2238 586 59812	100nF 50V
2354	4822 124 21732	10uF 20% 25V
2355	4822 124 21732	10uF 20% 25V
2356	4822 124 21732	10uF 20% 25V
2357	4822 122 33741	10pF 10% 50V
2358	4822 122 33741	10pF 10% 50V
2362	4822 126 14226	82pF 5% 50V
2363	4822 126 14226	82pF 5% 50V
2364	4822 126 14226	82pF 5% 50V
2365	4822 126 14226	82pF 5% 50V
2400	4822 124 22651	1uF 20% 50V
2401	2238 586 59812	100nF 50V
2403	2238 586 59812	100nF 50V
2404	2238 586 59812	100nF 50V
2405	4822 124 80483	47uF 20% 6,3V
2406	2238 586 59812	100nF 50V
2407	4822 124 22651	1uF 20% 50V
2408	2238 586 59812	100nF 50V
2410	2238 586 59812	100nF 50V
2411	4822 124 80483	47uF 20% 6,3V
2412	4822 124 80483	47uF 20% 6,3V
2413	4822 124 80483	47uF 20% 6,3V
2414	4822 124 80483	47uF 20% 6,3V
2415	4822 126 14249	560pF 10% 50V
2416	2020 552 94427	100pF 5% 50V
2417	2238 586 59812	100nF 50V
2418	2238 586 59812	100nF 50V
2419	4822 126 14249	560pF 10% 50V
2420	2020 552 94427	100pF 5% 50V
2421	4822 126 14249	560pF 10% 50V
2422	2020 552 94427	100pF 5% 50V
2425	4822 126 14249	560pF 10% 50V
2426	2020 552 94427	100pF 5% 50V
2427	4822 126 14249	560pF 10% 50V
2428	2020 552 94427	100pF 5% 50V
2429	2238 586 59812	100nF 50V
2430	2238 586 59812	100nF 50V
2431	4822 126 14249	560pF 10% 50V
2432	2020 552 94427	100pF 5% 50V
2433	4822 126 14249	560pF 10% 50V
2434	2020 552 94427	100pF 5% 50V
2437	4822 126 14249	560pF 10% 50V
2438	2020 552 94427	100pF 5% 50V
2439	4822 126 14249	560pF 10% 50V
2440	2020 552 94427	100pF 5% 50V
2441	2238 586 59812	100nF 50V
2442	2238 586 59812	100nF 50V

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ELECTRICAL PARTS LIST - MONO-BE BOARD

2443	2020 552 94427	100pF 5% 50V
2445	4822 126 14249	560pF 10% 50V
2446	4822 126 14249	560pF 10% 50V
2448	2020 552 94427	100pF 5% 50V
2451	2238 586 59812	100nF 50V
2454	2020 552 94427	100pF 5% 50V
2455	4822 126 14249	560pF 10% 50V
2501	2238 586 59812	100nF 50V
2502	2238 586 59812	100nF 50V
2503	2238 586 59812	100nF 50V
2504	2238 586 59812	100nF 50V
2505	4822 124 21732	10uF 20% 25V
2506	3198 017 41050	1uF 10V
2507	2238 586 59812	100nF 50V
2518	4822 126 13193	4,7nF 10% 63V
2519	2238 586 59812	100nF 50V

RESISTORS

3300	4822 051 30222	2k2 5% 0,062W
3301	4822 051 30472	4k7 5% 0,062W
3303	4822 051 30472	4k7 5% 0,062W
3305	4822 051 30472	4k7 5% 0,062W
3307	4822 051 30472	4k7 5% 0,062W
3309	4822 051 30339	33R 5% 0,062W
3311	4822 051 30472	4k7 5% 0,062W
3315	4822 051 30271	270R 5% 0,062W
3316	4822 051 30759	75R 5% 0,062W
3317	4822 051 30759	75R 5% 0,062W
3318	4822 051 30759	75R 5% 0,062W
3319	4822 051 30759	75R 5% 0,062W
3320	4822 051 30339	33R 5% 0,062W
3321	4822 051 30339	33R 5% 0,062W
3322	4822 051 30689	68R 5% 0,063W
3323	4822 051 30339	33R 5% 0,062W
3324	4822 051 30339	33R 5% 0,062W
3325	4822 051 30339	33R 5% 0,062W
3326	4822 051 30339	33R 5% 0,062W
3327	4822 051 30339	33R 5% 0,062W
3328	4822 051 30339	33R 5% 0,062W
3329	4822 051 30109	10R 5% 0,062W
3330	4822 051 30109	10R 5% 0,062W
3331	4822 051 30109	10R 5% 0,062W
3332	4822 051 30109	10R 5% 0,062W
3333	4822 051 30109	10R 5% 0,062W
3334	4822 051 30109	10R 5% 0,062W
3335	4822 051 30109	10R 5% 0,062W
3336	4822 051 30109	10R 5% 0,062W
3337	4822 051 30109	10R 5% 0,062W
3338	4822 051 30109	10R 5% 0,062W
3339	4822 051 30109	10R 5% 0,062W
3340	4822 051 30109	10R 5% 0,062W
3346	4822 117 13632	100k 1% 0,062W
3347	4822 051 30689	68R 5% 0,063W
3348	4822 051 30109	10R 5% 0,062W
3350	4822 051 30102	1k 5% 0,062W
3351	4822 051 30102	1k 5% 0,062W
3352	4822 051 30109	10R 5% 0,062W
3353	4822 051 30109	10R 5% 0,062W
3355	4822 051 30479	47R 5% 0,062W
3371	4822 051 30472	4k7 5% 0,062W
3372	4822 051 30103	10k 5% 0,062W
3373	4822 051 30102	1k 5% 0,062W
3400	4822 051 30479	47R 5% 0,062W
3401	4822 051 30479	47R 5% 0,062W
3402	4822 051 30103	10k 5% 0,062W
3403	4822 051 30103	10k 5% 0,062W
3404	4822 051 30479	47R 5% 0,062W
3405	4822 051 30479	47R 5% 0,062W
3406	4822 051 30479	47R 5% 0,062W
3408	4822 051 30479	47R 5% 0,062W
3409	4822 051 30479	47R 5% 0,062W
3410	4822 051 30103	10k 5% 0,062W
3411	4822 051 30103	10k 5% 0,062W
3412	4822 051 30103	10k 5% 0,062W
3413	4822 051 30103	10k 5% 0,062W
3414	4822 051 30103	10k 5% 0,062W
3415	4822 051 30103	10k 5% 0,062W
3416	4822 051 30103	10k 5% 0,062W
3417	4822 051 30472	4k7 5% 0,062W
3418	4822 051 30273	27k 5% 0,062W
3419	4822 051 30153	15k 5% 0,062W
3420	4822 051 30103	10k 5% 0,062W
3421	4822 051 30153	15k 5% 0,062W
3422	4822 051 30123	12k 5% 0,062W
3423	4822 051 30103	10k 5% 0,062W
3424	4822 051 30123	12k 5% 0,062W
3425	4822 051 30153	15k 5% 0,062W
3426	4822 051 30103	10k 5% 0,062W
3427	4822 051 30153	15k 5% 0,062W
3428	4822 051 30123	12k 5% 0,062W
3429	4822 051 30103	10k 5% 0,062W
3430	4822 051 30123	12k 5% 0,062W
3431	4822 051 30153	15k 5% 0,062W
3432	4822 051 30103	10k 5% 0,062W
3433	4822 051 30153	15k 5% 0,062W
3434	4822 051 30123	12k 5% 0,062W
3435	4822 051 30103	10k 5% 0,062W
3436	4822 051 30123	12k 5% 0,062W
3437	4822 051 30153	15k 5% 0,062W
3438	4822 051 30103	10k 5% 0,062W
3439	4822 051 30153	15k 5% 0,062W
3440	4822 051 30123	12k 5% 0,062W
3441	4822 051 30103	10k 5% 0,062W
3442	4822 051 30123	12k 5% 0,062W

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ELECTRICAL PARTS LIST - MONO-BE BOARD

RESISTORS

3443	4822 051 30153	15k 5% 0,062W
3444	4822 051 30103	10k 5% 0,062W
3445	4822 051 30153	15k 5% 0,062W
3446	4822 051 30123	12k 5% 0,062W
3447	4822 051 30103	10k 5% 0,062W
3448	4822 051 30123	12k 5% 0,062W
3449	4822 051 30153	15k 5% 0,062W
3450	4822 051 30103	10k 5% 0,062W
3451	4822 117 12139	22R 5% 0,062W
3452	4822 051 30123	12k 5% 0,062W
3453	4822 051 30103	10k 5% 0,062W
3454	4822 051 30123	12k 5% 0,062W
3455	4822 051 30153	15k 5% 0,062W
3470	4822 052 10478 ⚠	4R7 5% 0,33W
3471	4822 051 30109 ⚠	10R 5% 0,062W
3472	4822 051 30109	10R 5% 0,062W
3474	4822 052 10478	4R7 5% 0,33W
3475	4822 051 30109	10R 5% 0,062W
3476	4822 051 30109	10R 5% 0,062W
3478	4822 051 30109	10R 5% 0,062W
3479	4822 051 30109	10R 5% 0,062W
3500	4822 051 30103	10k 5% 0,062W
3501	4822 051 30759	75R 5% 0,062W
3502	4822 051 30479	47R 5% 0,062W
3503	4822 051 30472	4k7 5% 0,062W
3505	4822 117 11817	1k2 1% 1/16W
3512	4822 051 30103	10k 5% 0,062W
3513	4822 051 30103	10k 5% 0,062W
3514	4822 051 30472	4k7 5% 0,062W
3521	4822 117 12139	22R 5% 0,062W
3522	4822 117 12139	22R 5% 0,062W
3523	4822 117 12139	22R 5% 0,062W
3524	4822 117 12139	22R 5% 0,062W
3525	4822 117 12139	22R 5% 0,062W
3526	4822 117 12139	22R 5% 0,062W
3527	4822 117 12139	22R 5% 0,062W
3528	4822 117 12139	22R 5% 0,062W
3530	4822 117 12139	22R 5% 0,062W
3531	4822 117 12139	22R 5% 0,062W
3532	4822 117 12139	22R 5% 0,062W
3533	4822 051 30472	4k7 5% 0,062W
3534	4822 051 30472	4k7 5% 0,062W
3535	4822 117 12139	22R 5% 0,062W
3536	4822 117 12139	22R 5% 0,062W
3537	4822 117 12139	22R 5% 0,062W
3538	4822 117 12139	22R 5% 0,062W
3539	4822 117 12139	22R 5% 0,062W
3540	4822 117 12139	22R 5% 0,062W
3541	4822 117 12139	22R 5% 0,062W
3542	4822 117 12139	22R 5% 0,062W
3543	4822 117 12139	22R 5% 0,062W
3544	4822 117 12139	22R 5% 0,062W
3545	4822 117 12139	22R 5% 0,062W
3546	4822 117 12139	22R 5% 0,062W
3547	4822 117 12139	22R 5% 0,062W
3548	4822 117 12139	22R 5% 0,062W
3550	4822 117 12139	22R 5% 0,062W
3551	4822 117 12139	22R 5% 0,062W
3593	4822 051 30103	10k 5% 0,062W
4304	4822 051 30008	0R JUMPER 0603
4305	4822 051 30008	0R JUMPER 0603
4310	4822 051 30008	0R JUMPER 0603
4400	4822 051 30008	0R JUMPER 0603
4402	4822 051 30008	0R JUMPER 0603

COILS & FILTERS

5300	4822 157 11499	IND FXE EMI 100MHZ 60R
5301	4822 157 11499	IND FXE EMI 100MHZ 60R
5302	4822 157 70299	IND FXD 2,2uH 5%
5303	4822 157 70299	IND FXD 2,2uH 5%
5304	4822 157 70299	IND FXD 2,2uH 5%
5305	4822 157 70299	IND FXD 2,2uH 5%
5306	4822 157 71206	IND FXD 100MHZ 600R
5307	4822 157 71206	IND FXD 100MHZ 600R
5400	3198 018 63390	IND FXD 33uH 5%
5401	3198 018 63390	IND FXD 33uH 5%
5402	3198 018 63390	IND FXD 33uH 5%
5405	4822 157 71206	IND FXD 100MHZ 600R
5501	4822 157 11716	IND FXD 100MHZ 30R
5502	4822 157 11716	IND FXD 100MHZ 30R
5503	4822 157 11716	IND FXD 100MHZ 30R
5506	4822 157 11716	IND FXD 100MHZ 30R

TRANSISTORS & INTEGRATED CIRCUITS

7300	9965 000 18638	M29F800DT-70N1 with SW program
7301	9322 163 27685	NCP301LSN45
7302	9322 185 43671	ES6028F
7303	9322 178 78668	K4S641632F-TC70
7304	9965 000 04931	M24C01-WMN6
7305	9322 178 32668	LF27CDT
7310	3198 010 42310	BC847BW
7400	9322 177 92671	CS4362-KQ
7401	4822 209 30095	LM833D
7402	4822 209 30095	LM833D
7403	4822 209 30095	LM833D
7404	5322 130 60159	BC847B
7405	9352 456 90115	74HC1G125GW
7501	9322 185 10668	CS8415A-CZ
7503	9352 456 90115	74HC1G125GW
7504	3198 010 42310	BC847BW
7505	3198 010 42310	BC847BW

Note: Only the parts mentioned in this list are normal service spare parts.

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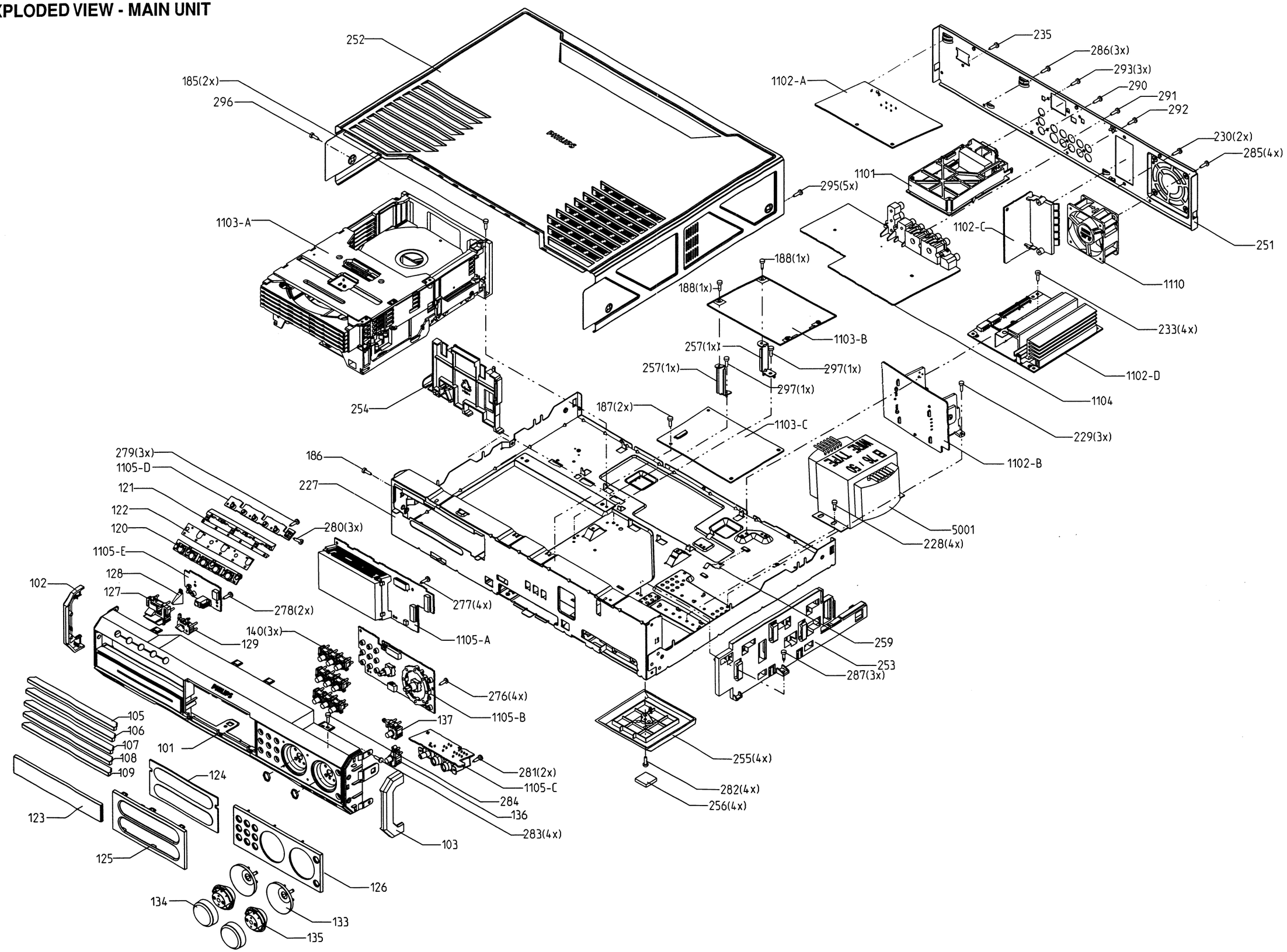
EXPLODED VIEW - MAIN UNIT



MECHANICAL & ACCESSORIES PARTS LIST - MAIN UNIT

101	3139 118 18791	Cabinet Front Silver	MX3900D
101	3139 257 51651	Cabinet Front	MX3910D
101	3139 257 50461	Cabinet Front Dark Grey	MX3950D
101	3139 257 51641	Cabinet Front	MX3960D
102	3139 118 18801	Cover Cab Side Left Silver	
102	3139 257 50471	Cover Cab Side L Dark Grey	
103	3139 118 18811	Cover Cab Side Right Silver	
103	3139 257 50481	Cover Cab Side R Dark Grey	
105	3139 118 18821	Cover Tray Disc 1 Silver	
105	3139 257 50491	Cover Tray Disc 1 Dark Grey	
106	3139 118 19101	Cover Tray Disc 2 Silver	
106	3139 257 50501	Cover Tray Disc 2 Dark Grey	
107	3139 118 19111	Cover Tray Disc 3 Silver	
107	3139 257 50511	Cover Tray Disc 3 Dark Grey	
108	3139 118 19121	Cover Tray Disc 4 Silver	
108	3139 257 50521	Cover Tray Disc 4 Dark Grey	
109	3139 118 19131	Cover Tray Disc 5 Silver	
109	3139 257 50531	Cover Tray Disc 5 Dark Grey	
120	3139 118 19441	Button Set CD Open/Close Chrome	
122	3139 113 27511	Cutsheet Shield CD Open/Close	
123	3139 118 18831	Panel Left Silver	MX3900D
123	3139 257 51671	Panel Left	MX3910D
123	3139 257 50541	Panel Left Dark Grey	MX3950D
123	3139 257 51661	Panel Left	MX3960D
124	3139 118 18841	Window Display	
125	3139 118 18851	Panel Display Silver	
125	3139 257 50551	Panel Display Dark Grey	
126	3139 118 18861	Panel Control Silver	
126	3139 257 50561	Panel Control Dark Grey	
127	3139 118 18871	Button Set Power Eco Silver	
127	3139 257 50571	Button Set Power Eco Dark Grey	
128	3139 114 77041	Lightguide Power Eco Stdby	
133	3139 118 18941	Ring Ornamental	
134	3139 118 18931	Cap Knob Rotary Chrome	
135	3139 118 18921	Knob Source/Volume Rotary	
136	3139 118 19461	Button Set Bass Chrome	
137	3139 118 19471	Button Set Treble Chrome	
140	3139 118 19451	Button Set Source Control Chrome	
256	3139 113 27220	Foot Rubber	
259	3139 111 01470	Spring Grounding	
296	3139 110 40691	Screw M5x6 Hex W/Head Chrome	
296	3139 110 40701	Screw M5x6 Hex W/Head Black	
345	3139 119 01381	Satellite LS Package CS3900D/17S	
345	3139 119 01401	Satellite LS Package CS3950D/17S	
346	3139 119 01391	Subwoofer Box SW3900/17S	
346	3139 119 01411	Subwoofer Box SW3950D/17s	
351	4822 303 50063	FM Antenna	
352	4822 303 50082	AM Loop Antenna	
353	3139 228 61701	Remote Control RC19241001/01	
356	2422 070 98246 ⚠	Mains Cord UL 7A 1,5M	/17/37
356	2422 070 98151 ⚠	Mains Cord Eur 2A5 1,5M	/78
357	3139 128 73011 ⚠	Mains Adaptor	/78
358	4822 263 21206	Cable Video 1,7M Yellow	
361	2422 076 00374	Cable Cinch 1,5M Gn/Bu/Rd	
362	3103 308 92610	Cable Audio 1,5M 2x2 RCA	
370	3139 115 21991	Instruction for Use	MX3900D/MX3950D
1110	3103 308 52950	Fan Assembly KD1206PTS3	
5001	3139 118 32661 ⚠	Mains Transfo. PWR207 6x75W	/17/37
5001	3139 118 32641 ⚠	Mains Transfo. PWR207 6x75W	/78
8000	3139 110 35031	FFC Cable Pin 14cm AD	
8001	3139 111 02001	FFC Cable 13Pin 40cm BD	
8002	3139 111 02041	FFC Cable 17Pin 40cm AD	
8003	3139 111 02271	FFC Cable 13Pin 10cm AD	
8005	3139 111 02051	FFC Cable 7Pin 34cm AD	
8006	3139 110 34860	FFC Cable 4Pin 34cm AD	
8008	3139 111 02021	FFC Cable 4Pin 22cm AD	
8010	3139 111 02601	FFC Cable 16Pin 18cm AD	
8011	3139 111 02591	FFC Cable 10Pin 28cm AD	
8012	3139 111 02581	FFC Cable 13Pin 18cm AD	
8013	3139 111 02571	FFC Cable 10Pin 18cm BD	
8014	3139 111 02571	FFC Cable 10Pin 18cm BD	
8016	3139 110 36140	FFC Cable 4Pin 18cm AD	
8018	3139 111 02231	FFC Cable 5Pin 12cm AD	

Note: Only the parts mentioned in this list are normal service spare parts.

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Breakdown of Satellite LS Package CS3900D/17S (Applicable for MX3900D & MX3910D only)

9965 000 17040	Front Left Speaker Box
9965 000 17041	Front Right Speaker Box
9965 000 17042	Surround Left Speaker Box
9965 000 17043	Surround Right Speaker Box
9965 000 17044	Center Speaker Box
9965 000 17045	Front Grille Assy (Center Speaker)
9965 000 17046	Philips Logo (Center Speaker)
9965 000 17047	Keyhole Bracket Pack set Silver

Breakdown of Satellite LS Package CS3950D/17S (Applicable for MX3950D & MX3960D only)

9965 000 17050	Front Left Speaker Box
9965 000 17051	Front Right Speaker Box
9965 000 17052	Surround Left Speaker Box
9965 000 17053	Surround Right Speaker Box
9965 000 17054	Center Speaker Box
9965 000 17055	Front Grille Assy (Center Speaker)
9965 000 17046	Philips Logo (Center Speaker)
9965 000 17056	Keyhole Bracket Pack Set Black

Breakdown of SW3900/17S & SW3950/17S (Applicable for all)

9965 000 17048	Front Grille Assy SW3900/17S
9965 000 17049	Front Grille Assy SW3950/17S
9965 000 17046	Philips Logo

Note: Only the parts mentioned in this list are normal service spare parts.

SCREW LISTS - MAIN UNIT

185	M3 x 6
186	D3 x 10
187	M3 x 6
188	M3 x 6
228	M3 x 6
229	M3 x 6
230	D3 x 10
233	M3 x 6
235	D3 x 10
276	D3 x 10
277	D3 x 10
278	D3 x 10
279	D2 x 8
280	D2 x 8
281	D2 x 8
282	M3 x 6
283	M3 x 6
284	M3 x 6
285	D3 x 10
286	M3 x 6
287	M3 x 6
288	D3 x 10
290	D3 x 10
291	D3 x 10
292	D3 x 10
293	D3 x 10
295	M3 x 6
296	M5 x 6 Hex W/Head
297	M3 x 6

REVISION LIST

Version 1.0

* Initial release

Version 1.1

* Add MX3910D/17 and MX3960D/17 into the Service Manual and some correction.
  Pages modified : Pg Front, 1-2 and 2-1
  Pages corrected : Pg 3-3, 8-2, 11-11, 12-7 and 12-8

* Add new pcb layout & schematics released:
  Front Board: Pg 6-2a, 6-3a,b,c, 6-4a, 6-5a,b, 6-6a and 6-7a,b
  AV Board: Pg 8-3a,b,c, 8-4a., 8-5a, 8-6a, 8-7a, 8-8a, 8-9a, 8-10a,b,c and 8-11a,b,c
  Power Module: Pg 9-2a,b,c,d,e, 9-3a,b,c,d,e, 9-4a, 9-5a, 9-6a and 9-7a
  5DTC Control Board: Pg 10-4a
  Mono-BE Board: Pg 12-2a,b,c, 12-3a, 12-4a, 12-5a and 12-6a

Version 1.2 (2 April 2004)

* Add MX3910D/78